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ABSTRACT

Pursuant to the Native land claims within Alaska, this compilation of background data and interpretive materials relevant to a fair resolution of the Alaska Native problem seeks to record data and information on the Native peoples; the land and resources of Alaska and their uses by the people in the past and present; land ownership; and future needs of the Native peoples, the State of Alaska, and the Federal Government. The document contains 9 chapters: "Alaska Natives Today: An Overview" (Population Distribution and Growth, Variety and Similarity, Jobs and Earned Income, Public and General Assistance, Education, Health, Native Organizations, Federal Spending and Alaska Natives); "Village Alaska" (General Characteristics, Economy of Village Alaska, Education and Training, Housing and Facilities, Health Status, Future of Villages and Governmental Policy); "Land & Ethnic Relationships" (The Land, Regional Analysis, Regional Characterization and Ethnic Identification, Regional Occupation and Livelihood Patterns); "Natural Resources" (Significance, Surface Resources [wildlife, water, agriculutre, forests, fisheries, and recreation], Subsurface Resources [locatable and leasable mineral resources]); "The Land Issue" (History: Review of Laws and Policy, Present Status of Lands Statewide and Regionally, The Land Conflict); "Economic Development" (Alaska's Economic Development, Impact of Economic Development on Native Welfare, Economic Consequences of Settlement); and "Framework for Decision" (Elements of the Problem, Elements of the Settlement). Included are 579 figures and a 253-item bibliography. A map illustrating locations of Native communities comes with the document if ordered through GPO. (MJB)

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October 1, 1968

Honorable Henry M. Jackson, Chairman
Committee on Interior and Insular Affairs
United States Senate
Room 3204, New Senate Office Building
Washington, D. C. 20510

Dear Senator Jackson:

It is my pleasure to submit on behalf of the Federal Field Committee and its member agencies our report on Native land claims. This report is submitted in response to your request of March 8, 1968, for a compilation of background data and interpretive materials relevant to a fair and intelligent resolution of the Alaska Native problem.

Our effort has been to record all relevant, available data and information on the Native peoples, the land and resources of Alaska, the uses which these people have made of them in the past, their present uses and ownership, and the future--often conflicting--needs of the Native peoples, the State of Alaska, and the federal government. We have also indicated some of the alternatives which may be available to the Congress in its search for a fair and constructive solution to the very complex problem of meeting the legitimate claims of Native peoples while fostering the economic aspirations of a young state in the early stages of its development.

Throughout our work, we have had the full cooperation of all federal and state agencies. We wish not only to acknowledge their assistance but also to say that this report is uniquely the work of all agencies.

Sincerely yours,

Joseph H FitzGerald

Joseph H. FitzGerald
Chairman

TABLE OF CHAPTERS

Alaska Natives Today: An Overview

Village Alaska

Land & Ethnic Relationships

Natural Resources

The Land Issue

Economic Development

Framework for Decision

TABLE OF FIGURES

BIBLIOGRAPHY

TABLE OF CHAPTERS

OVERVIEW 1

37

85

285

427

517

533

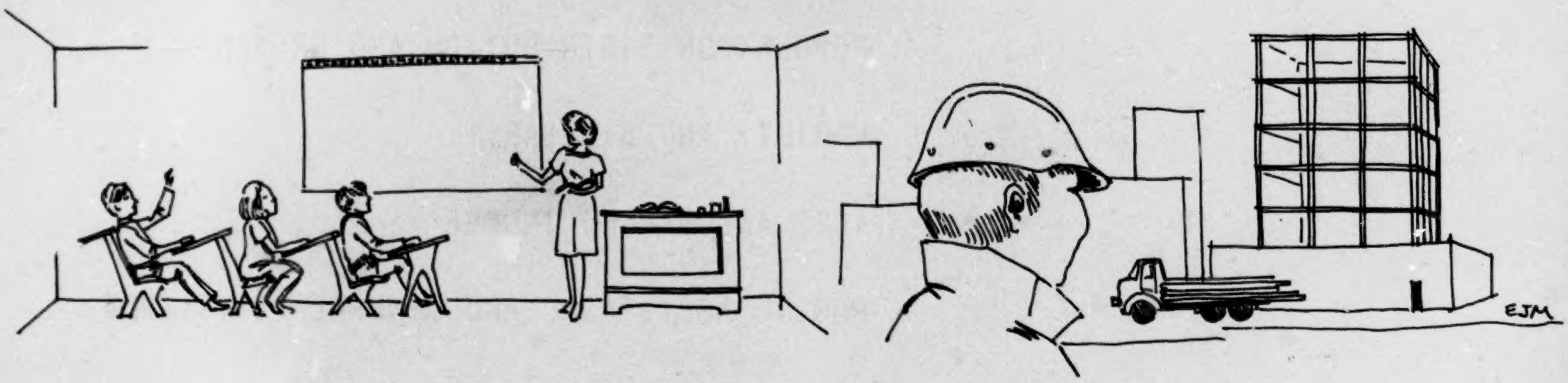
RES 547

556

ALASKA NATIVES TODAY: A

CHAPTER I

NATIVES TODAY: AN OVERVIEW



Robert D. Arnold

CHAPTER I

TABLE OF CONTENTS

INTRODUCTION . . . .

POPULATION DISTRIBUTION AND GROWTH . . . .

VARIETY AND SIMILARITY . . . .

JOBS AND EARNED INCOME . . . .

PUBLIC ASSISTANCE AND GENERAL ASSISTANCE . . . . . .

EDUCATION . . . .

HEALTH . . . .

NATIVE ORGANIZATIONS . . . .

FEDERAL SPENDING AND ALASKA NATIVES . . . .

A CONCLUDING NOTE . . . .

Grateful acknowledgment is made to agencies and persons providing information for this
Bureau of Indian Affairs, Juneau, Alaska, and his staff; Dr. Holman R. Wherritt, Area Director,
U. S. Public Health Service, Anchorage, Alaska, and his staff; and to Emil Notti, President, Ala
clusions or inferences in the text, however, are those of the staff of the Federal Field Committ
agencies or individuals.

CHAPTER I

TABLE OF CONTENTS

. . . . 3

BUTION AND GROWTH 5

ARITY 11

NCOME 12

AND GENERAL ASSISTANCE 14

. . . . 17

. . . . 19

ONS 27

AND ALASKA NATIVES 31

. . . . 35

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d persons providing information for this chapter, especially Charles A. Richmond, Area Director, Dr. Holman R. Wherritt, Area Director, Alaska Native Health Area, Division of Indian Health, staff; and to Emil Notti, President, Alaska Federation of Natives, Anchorage, Alaska. Any con- f the staff of the Federal Field Committee and do not necessarily reflect those of contributing

ALASKA NATIVES TODAY: AN

A great contrast exists today between the high income, moderate standard of living, and existence of reasonable opportunity of most Alaskans and the appallingly low income and standard of living, and the virtual absence of opportunity for most Eskimos, Indians, and Aleuts of Alaska.

About four-fifths of the more than one-quarter million people of Alaska are not Alaska Natives. Most of them, living in or near urban places, lead lives very much like those of other Americans. They are, by and large, regularly employed. Most families earn more than $10,000 per year, though a few earn less than $2,000. Virtually all adults have completed primary education and the median educational level is more than 12 years.

The other one-fifth, who are Eskimos, Indians, and Aleuts, spring from cultures very different from those of other Alaskans or other Americans. Most of them live in widely scattered settlements across the half-million square miles of Alaska. In an economy based importantly in a pattern of life of subsistence fishing and hunting, the large majority of these Alaskans are unemployed or only seasonally employed. Though some few of the families have incomes of $5,000 or more annually, most of them live in poverty. And, almost seven out of ten adults have less than an elementary school education (1960).

Largely because they lack cash income and because the costs of purchased goods and services are high, most Natives live in small, dilapidated or substandard houses under unsanitary conditions. Partly as a result of these conditions, but also owing to unbalanced diets

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and other factors, they are more often victims of disease, and their life span is much shorter than that of other Alaskans.

Another dimension of the contrast between the Native and non-Native sector of the population is that of the lack of opportunity for economic advancement among most Natives. They are not only under-educated for the modern world, but they are living where adequate education or training cannot be obtained, where there are few jobs, where little or no economic growth is taking place, and where little growth is forecast. And though there is some evidence of geographic mobility, they have tended to remain in areas occupied by their parents.

Most Alaska Natives characterized by these circumstances are residents of places where the population is largely of Native origin--they are village Alaskans. It is these people who are the specific subject of this review.

While these people are the specific focus, a profile of the total Native population of the state is necessary to portray not only what characteristics apply to Alaska Natives generally, but also to illustrate the variety--the differences that exist among Alaska Natives.

How can Alaska Natives be enabled to improve the circumstances under which they live? And how can settlement of their land claims and protests--the subject of proposed legislation before Congress--contribute importantly to this end? It is these two questions made one that are now the opportunity of government to answer.

POPULATION DISTRIBUTION AND GROWTH

Newest estimates put the number of Eskimos, Indians, and Aleuts residing in Alaska at about 53,000 people.[1] Except for about 1,000 Indians on two small reservations, these Natives do not live on reservations.[2] They live in towns and villages throughout the half-million square miles of the state--an area greater than the combined areas of the 19 most eastern states of the United States.

Though some migrations of Native persons from their original habitats has occurred, generalizations about the regions occupied by each of the major groups can still be made. On the western and northern coasts of Alaska, along the Bering Sea and Arctic Ocean, live the Eskimos--who make up somewhat more than half of the total Native population.[3] In southeastern, interior, and southcentral Alaska live the Indians, the next largest group of Natives. And, in southwestern Alaska, along the Alaska Peninsula and the Aleutian Chain, live the Aleuts, the smallest of the three groups. Principal exceptions to these patterns (illustrated in Figure 1) are those persons and families who have moved to urban areas, particularly Anchorage and Fairbanks.

The civilian resident population of ten census districts[4] in northern and western Alaska is predominantly Native. As is illustrated in Figure 2, in these districts three of five persons are Eskimo, Indian, or Aleut; in the rest of the state only one person in ten is Native.

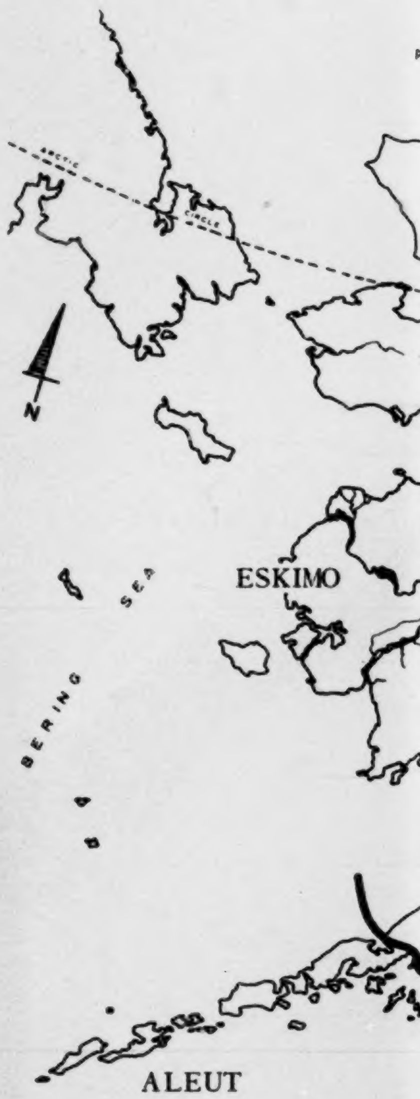

FIGURE 1: General
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Source: Generaliz
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1967, Map

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[1] The total Native population today and all subsequent data on numbers of Natives are drawn from *Villages in Alaska and Other Places Having a Native Population of 25 or More,* a report prepared by the Federal Field Committee for Development Planning in Alaska, Anchorage, Alaska, 1967.

[2] The two reservations are Klukwan and Metlakatla.

[3] In 1960 about 52 percent of the total Native population were Eskimo, 34 percent were Indian, and 14 percent were Aleuts. (U.S. Bureau of the Census, *U. S. Census Population: 1960 Subject Reports, Nonwhite Population by Race.* Final Report PC (2)-1C, U. S. Government Printing Office, Washington, D. C. 1963, p. 253.)

[4] The term "census districts" refers to election districts as they existed until 1961. They were used as units of data collection in the 1960 census and continue to be used as such by several agencies including the Alaska State Department of Labor and the Division of Vital Statistics of the Department of Health and Welfare.

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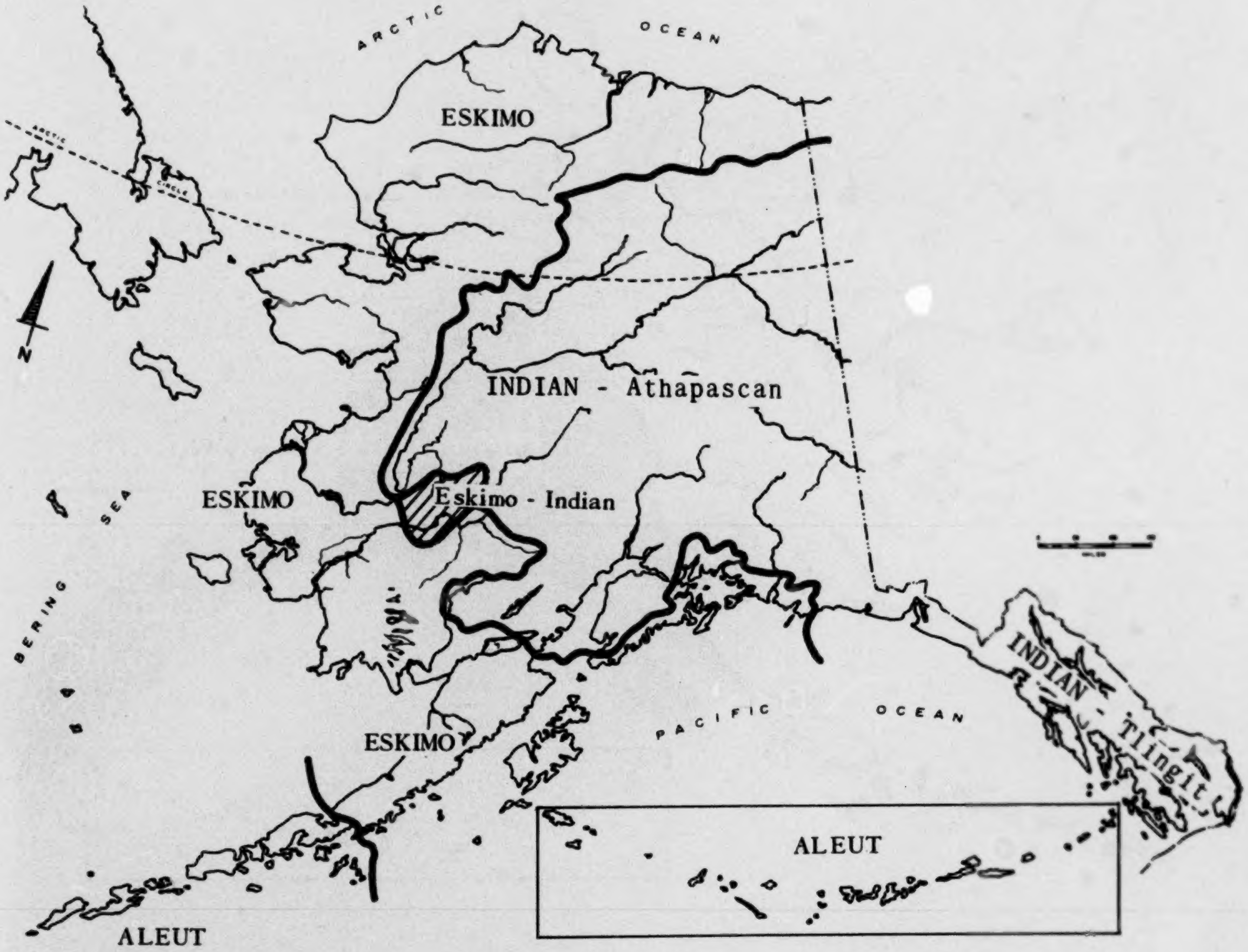
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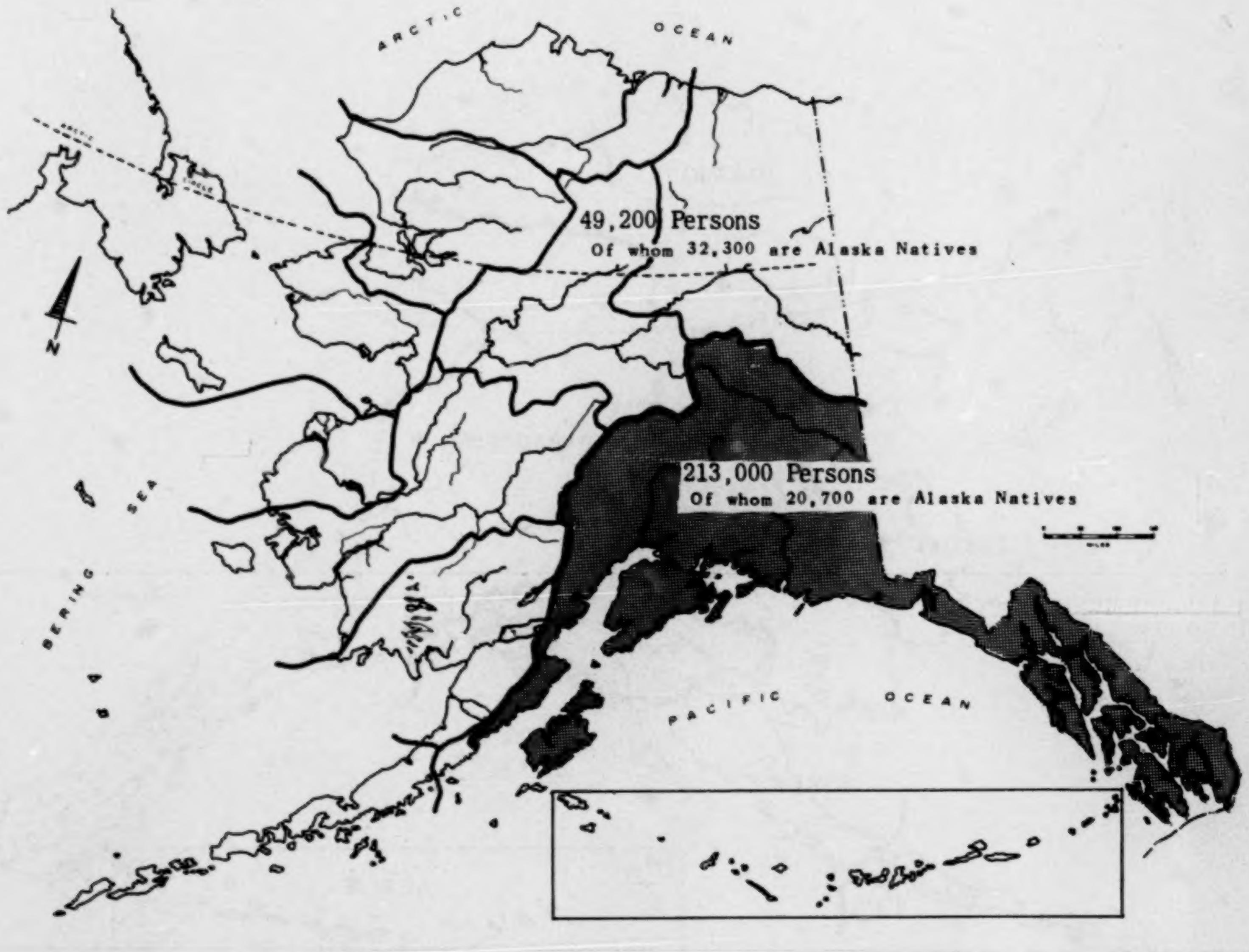
FIGURE 1: Generalized Geographic Distribution of Eskimos, Indians, and Aleuts in Alaska

Source: Generalized distribution based upon: Wendell H. Oswalt, *Alaskan Eskimos*, San Francisco: Chandler Publishing Company, 1967, Map 2.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49,200 Persons
Of whom 32,300 are Alaska Natives
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Of whom 20,700 are Alaska Natives
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FIGURE 2: Distribution of Alaska Native and Non-Native Population, 1967.

Source: *Villages in Alaska and Other Places Having a Native Population of 25 or More,* a report prepared by the Federal Field Committee for Development Planning in Alaska, Anchorage, Alaska, 1967, (Native populations), and Alaska Department of Health and Welfare, Branch of Statistical Services, *Alaska Vital Statistics: 1966,* Juneau, Alaska, 1968. (Total population).

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[5] The
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FIGURE 3

DISTRIBUTION OF ALASKA NATIVES BY SIZE OF PLACE
IN PREDOMINANTLY NATIVE PLACES, 1967

Total Size of Place	No. of Places	Native Population	Cumulative Totals No. of Places	Cumulative Totals Native Population
25-99	50	2,839	50	2,839
100-199	64	8,813	114	11,652
200-299	26	5,735	140	17,387
300-399	15	4,357	155	21,744
400-499	12	4,807	167	26,551
500-599	2	1,021	169	27,572
600-699	2	1,113	171	28,685
700-799	-	-	171	28,685
800-899	1	825	172	29,510
900-999	-	-	172	29,510
1000-2499	6	7,888	178	37,398

Source: *Villages in Alaska and Other Places Having a Native Population of 25 or more,* a report prepared by the Federal Field Committee for Development Planning in Alaska, Anchorage, Alaska, 1967.

More than 70 percent of Alaska's Natives (about 37,000 persons) live in 178 villages or towns that are predominantly Native--places where half or more of the residents are Natives. None of these is an urban place. Half of these places have a population of 155 persons or less (See Figure 3). Another 25 percent of Alaska's Natives (about 11,500 persons) live in six urban places--Anchorage, Fairbanks, Juneau, Ketchikan, Kodiak, and Sitka. Most of the others live in smaller non-Native towns such as Wrangell, Petersburg, Kenai, or Seward, but there may be as many as a few hundred at isolated one-or-two family locations (See Figure 4).

Migration to urban places is occurring. In 1960, the total Native population of Alaska's six largest cities was 5,297--a little less than half what it is estimated to be today.[5] Ten years ago, as may be seen in Figure 5, Native school enrollment in these places was well under half what it is today--a further indicator of migration. In Alaska's largest city, Anchorage, the number of Native school children has quadrupled since 1957.

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[5] The urban places are Anchorage-Spenard, Fairbanks, Juneau, Ketchikan, Kodiak, and Sitka. (U. S. Bureau of the Census, *op. cit.*, p. 252.)

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Migration to some large Native places is also occurring. Both Kotzebue and Bethel have grown to nearly 1800 persons, nearly tripling their 1950 populations. Barrow, now with over 1800 persons, has doubled in size since 1950.

Migration of Natives to other states goes unrecorded, but such migration appears to be less than one percent annually. In the decade between 1950 and 1960, the total natural increase (excess of births over deaths) was 12,645, but the increase indicated by the 1960 census was only 9,197. But this apparent out-migration of 3,268 Native persons, as Dr. George W. Rogers of the University of Alaska points out, is generally assumed to be an overstatement. He suggests that some of the difference between 1950 and 1960 may be accounted to differences in reporting standards, errors, or the change in census racial classification procedures.[6]

The number of Alaska Natives residing in other states or nations today is unknown. Nearly one of six Tlingit and Haida claimants who completed informal census reports between 1961 and 1964 were in other states or foreign countries, but migration outside Alaska by Eskimos or Athabascan Indians would likely be much less than that of the more acculturated Indians of southeastern Alaska.[7]

While migration to urban places in Alaska and to other states is occurring, villages are not vanishing from the scene today as is often assumed. There are today twelve fewer separate Native places (of 25 or more persons) than were indicated in the 1950 census, but more than 80 percent of the places continuing to exist are larger than they were seventeen years ago. And more than half of these are growing more rapidly than the approximate rate of net natural increase. The aggregate population of Native places today is a third larger than it was in 1950.[8]

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FIGURE 4: Distrib
places, 1967.

Source: *Villages*
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[6] In 1960 members of a household could classify themselves by race; in 1950 the racial classification was made on the basis of the enumerator's observations. (George W. Rogers, *Alaska Regional Population and Employment*, SEG Report No. 15, University of Alaska, College, Alaska, 1967, p. 51.)

[7] Mamie L. Mizen, *Federal Facilities for Indians: Tribal Relations with the Federal Government*, U. S. Government Printing Office, Washington, D. C., 1966, p. 602.

[8] See Figure II-4.

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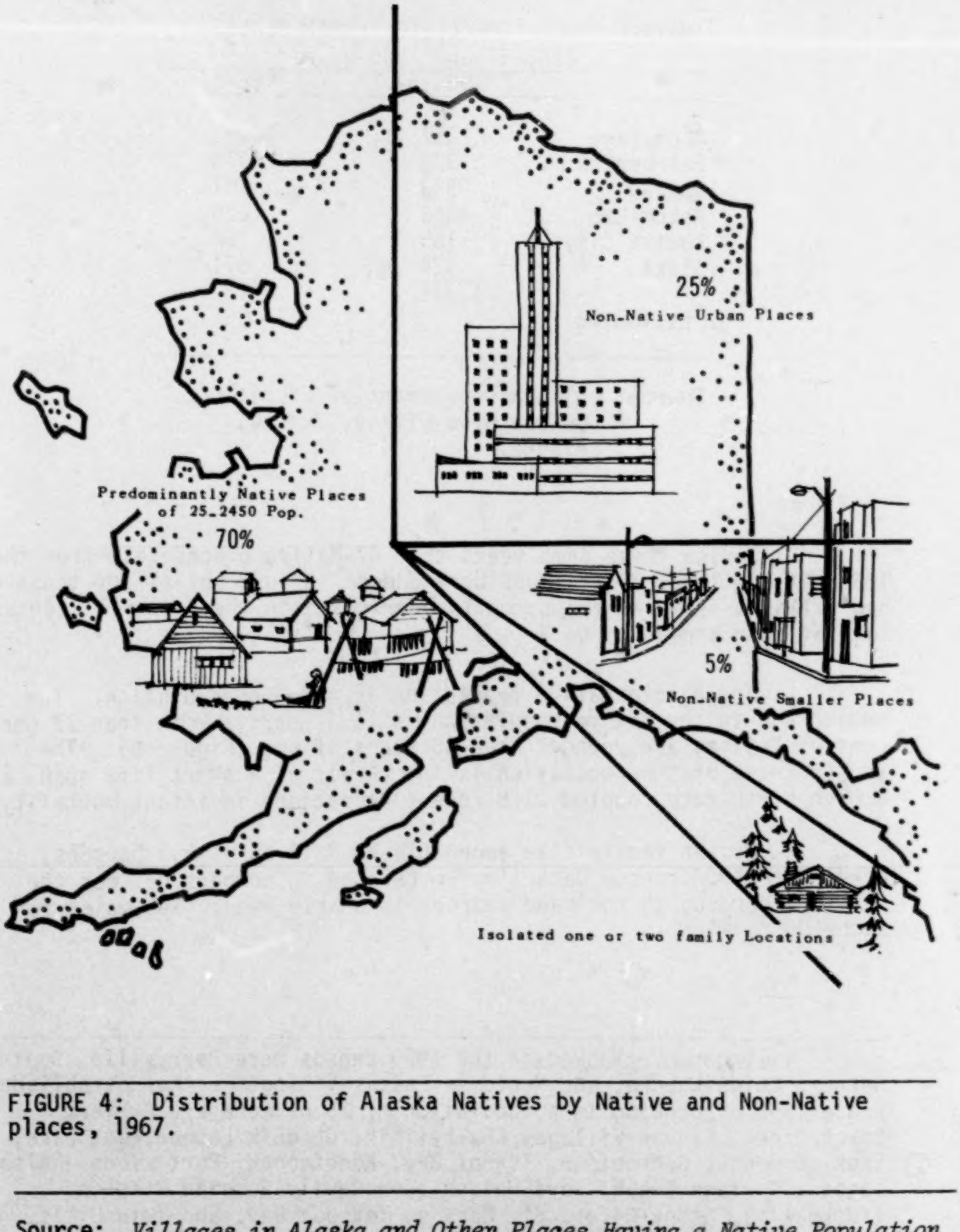
25%
Non-Native Urban Places
Predominantly Native Places of 25-2450 Pop.
70%
5%
Non-Native Smaller Places
Isolated one or two family Locations

FIGURE 4: Distribution of Alaska Natives by Native and Non-Native places, 1967.

Source: *Villages in Alaska and Other Places Having a Native Population of 25 or More*, a report prepared by the Federal Field Committee for Development Planning in Alaska, Anchorage, Alaska, 1967. (Native populations)

FIGURE 5

NATIVE SCHOOL ENROLLEES, URBAN PLACES
1956-57 and 1966-67

	1956-57	1966-67
Anchorage	257	1,253
Fairbanks	328	713
Juneau	393	681
Ketchikan	345	629
Kodiak City	165	250*
Sitka	324	611
	1,812	4,137

*Estimated

Source: Alaska Department of Education, Juneau Area Office, Juneau, Alaska.

During these same years that 37 Native places fell from the 1950 village list, 25 villages were added. Though not all of these are new villages--some were apparently overlooked in the decennial census--most of them appear to be.[9]

The Alaska Native population is a young population. The median age in the Native population is 16.3 years. More than 77 per cent of Natives are younger than 35 years of age (Figure 6). The youthfulness of the population is the result of a short life span, and a high birth rate coupled with recent reductions in infant mortality.[10]

Median family size among Alaska Natives is 5.3 persons, according to 1960 census data.[11] The balance in numbers between the sexes, according to the same source, is nearly even: 108 males for each 100 females.[12]

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[9] Villages overlooked in the 1950 census were Perryville, South Naknek, Chignik Lake, and Mentasta Lake. Villages either established since 1950 or growing to a population of 25 or more are Ambler, Birch Creek, Canyon Village, Chalkyitsik, Chignik Lagoon, Dot Lake, Ekuk, Emmonak, Georgetown, Ivanof Bay, Kongigonak, Port Lions, Nelson Lagoon, Portage Creek, Port Heiden, Red Devil, Russian Mission (Kuskokwim), Stony River, St. Mary's, Toksook Bay, and Twin Hills.

[10] George W. Rogers, *Alaska's Native Population and Poverty*, University of Alaska, College, Alaska, 1965, p.2.

[11] *Ibid.*, p.4.

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FIGURE 6

PERCENTAGE DISTRIBUTION OF ALASKA'S NATIVE POPULATION BY AGE AND SEX BASED ON THE 1960 CENSUS

Age	Total	Male	Female
All ages	100.0	51.6	48.4
Under 5	18.9	9.6	9.3
5-9	15.8	8.1	7.7
10-14	12.6	6.4	6.2
15-19	10.4	5.3	5.1
20-24	7.1	3.7	3.4
25-29	6.8	3.5	3.3
30-34	5.8	3.1	2.7
35-39	5.0	2.7	2.3
40-44	4.0	2.0	2.0
45-49	3.9	2.1	1.8
50-54	2.7	1.4	1.3
55-59	2.2	1.3	0.9
60-64	1.4	0.7	0.7
65-69	1.2	0.7	0.5
70-74	1.0	0.6	0.4
75 and over	1.2	0.6	0.6
Median age	16.3		

Source: U. S. Department of Health, Education and Welfare, Public Health Service, *Indian Health Highlights*, June 1968.

Alaska's Native population is growing at a rate nearly twice that of the United States as a whole. The crude rate of natural increase[13]--about 29 persons per thousand annually--is comparable to that of southeast Asia or South America, regions typically described as undergoing population explosions.

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[12] U. S. Department of Health, Education and Welfare, Public Health Service, *Indian Health Highlight*, June, 1966, p. 2.

[13] The crude rate of natural increase is calculated by subtracting the crude death rate (the number of deaths per thousand in the population) from the crude birth rate (the number of births per thousand in the population).

FIGURE 7

CRUDE RATE OF NATURAL INCREASE
ALASKA NATIVE POPULATION, 1960-66

	Crude Birth Rate	Crude Death Rate	Crude Rate of Natural Increase
1960	47.8	9.4	38.4
1961	47.6	9.8	37.9
1962	47.6	9.4	38.2
1963	45.9	9.4	36.5
1964	42.5	9.8	32.7
1965	42.1	9.1	33.0
1966	38.3	9.4	28.9

Source: Alaska Department of Health and Welfare, Branch of Statistical Services, *Alaska Vital Statistics*, Juneau, Alaska, 1968.

FIGURE 8

ESTIMATE OF CIVILIAN RESIDENT POPULATION OF ALASKA
NATIVE AND NON-NATIVE, 1970-2000

	LOW ESTIMATES Civilian Population		HIGH ESTIMATES Civilian Population	
	Non-Native	Native	Non-Native	Native
1970	206,600	53,400	238,500	60,000
1980	237,100	60,900	377,000	83,000
1990	269,700	69,300	510,000	109,000
2000	303,900	77,100	757,000	141,000

Source: George W. Rogers, *Alaska Regional Population and Employment*, SEG Report No. 15, University of Alaska, College, Alaska, 1967.

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[15] Rogers, *op. ci*

[16] *Ibid.*

Though the crude rate of natural increase remains high, it has declined from the record high registered in 1960 when it was 38.4 per thousand (Figure 7). The decline in the last two years in part may be attributable to family planning.[14]

Estimates of the future size of Alaska's Native population made by Rogers range from 60,900 to 83,000 in 1980 and from 77,000 to 141,000 by the year 2000 (See Figure 8).

Both high and low projections, Rogers points out, "reflect differences in the resulting Native population reaction to the total economic setting implied in the low and high population estimates."[15] In arriving at his low estimates, he assumes a declining annual rate of net natural increase to two percent and, in a setting of a generally stagnating economy, migration of Natives from Alaska. In arriving at his high estimate, he also assumes a declining rate of net natural increase to two percent, and in a setting of economic growth, migration of Natives to places within Alaska where opportunities exist. Important to understanding the estimates is Rogers' explicit recognition that government has the power to change conditions:

> Underlying both the high and low projections of Native population was the very basic assumption that trends would be strongly influenced by the intervention of purposeful and effective public programs to achieve an increase in practice of birth control and family planning, vocation training in accord with a realistic and timely evaluation of the general emerging employment situation, education and assistance for relocation and change in basic ways of living. Such programs with these broad objectives are already in existence or in the planning stages and will be expanded to the end that the Native Alaskan will approach the non-Native in health and economic and social mobility.[16]

While purposeful intervention does exist, the Native today--in order to reach the economic levels of non-Natives of Alaska--needs to make very substantial gains.

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[14] "The percentages of women of childbearing age (15-44) participating in the [Division of Indian Health] family planning program in Alaska has increased from an estimated 3.0 percent in July, 1965 to 35.9 percent in October of 1967. One result has been a 6.4 percent decrease in births in Indian Health Alaskan hospitals in fiscal year 1967 from 1965, reversing a trend of steady increase in previous years." Letter from U. S. Secretary of Health, Education, and Welfare to U. S. Secretary of Commerce, Washington, D. C., January 4, 1968.

[15] Rogers, *op. cit.*, p. 100.

[16] *Ibid.*

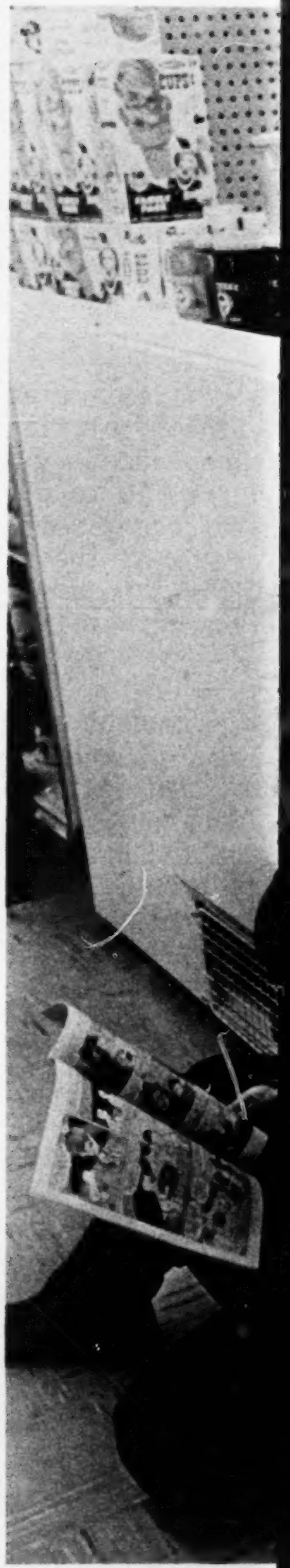
VARIETY AND SIMILARITY

Alaska Natives are, of course, citizens of the United States and Alaska. While they have special status under federal law as aboriginal people of Alaska, they are not wards of government. Natives vote, hold political office, serve in the armed forces of the United States, pay taxes, and otherwise accept and exercise the rights and duties of citizens.

As in other ethnic groups of the citizenry, there is not only similarity within the group but variety as well.

Some Alaska Natives are very much like white Alaskans. Though their cultural heritage is far different from the backgrounds of non-Native Alaskans, these Natives--in their style of dress and pattern of living, jobs and wants and aspirations--are not distinguishable. Other Alaska Natives, depending upon among other things, whether they are Eskimos, Indians, or Aleuts, where they live and what their ages are, are culturally different. Most of these people are residents of predominantly Native places. Between those who are very much like other Alaskans in their style of life and those very unlike other Alaskans, there are large numbers of persons who are at varying stages of culture change. And, among Alaska Natives today, there is varying dependence upon land and water resources.

Dental Technicians, *Photo by U. S. Public Health Service*



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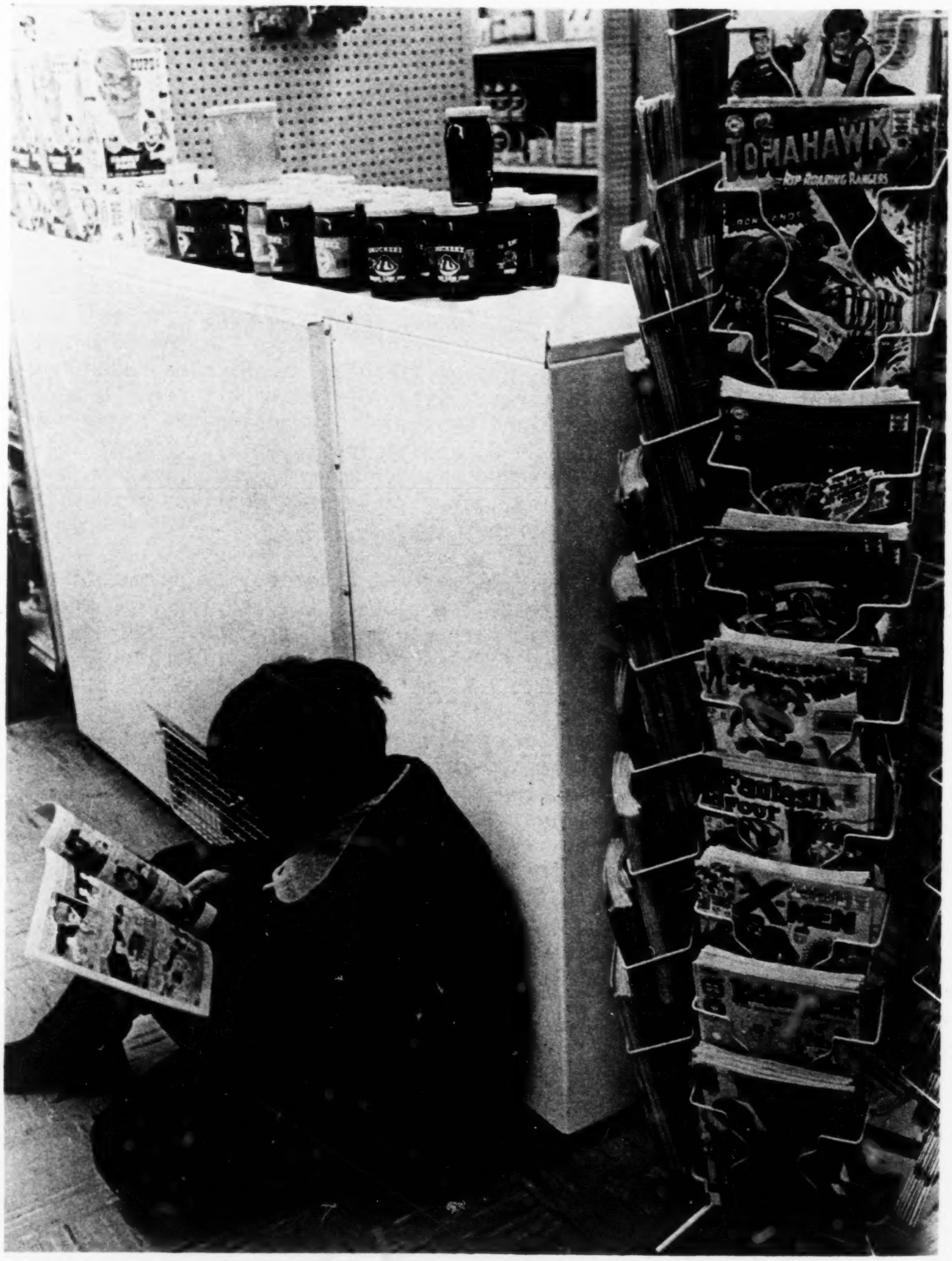
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JOBS AND EARNED INCOME

Among Alaska Natives generally, more persons are unemployed or are seasonally employed than have permanent jobs. More than half of the work force is jobless most of the year; for them, food gathering activities provide basic subsistence. Only one-fourth of the work force has continuing employment.

The Alaska Native work force, urban and rural, is estimated to be composed of 16,000 to 17,000 persons. Others in the population are under 16, away at school, old or disabled, or have dependent children for whom no child care exists. Of the work force, 50 to 60 percent are jobless in March and September, according to recent semi-annual reports compiled by the Bureau of Indian Affairs.[17] At these times only half of those employed have permanent jobs. In the summers, when no estimates are compiled, joblessness among Natives across the state may drop to 20 or 25 percent.[18]

In urban areas, Natives work at a variety of permanent and temporary jobs. Some few are self-employed, but the larger number are employees. While some are carpenters, electricians, and equipment operators, more are unskilled workers or construction laborers. In 1967 there were about 1400 Natives who were permanent or temporary federal employees (of some 14,000 in the state). Most of them, according to a government study, "are in lower level jobs--laborers, building maintenance men, mess attendants--but many others hold positions such as meteorological or cartographic technicians, licensed practical nurses, or clerk typists; and some hold positions requiring much skill and exercise of responsibility such as teachers, airplane pilots, and employment assistance and tribal relations officers."[19] State and local governments employ Natives, but no data exists on such employment except for the Anchorage area where the city and borough employ nineteen Natives in their combined work force of 940.[20]

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[17] U. S. Bureau of Indian Affairs, Juneau Area, *Report of Labor Force, Employment and Unemployment* as of March, 1967 and September, 1967.

[18] Interview with H. Prent Gazaway, Area Economist, U. S. Bureau of Indian Affairs, Juneau Area Office, Juneau, Alaska, December 14, 1967.

[19] Robert Arnold and Esther Wunnicke, *Alaska Natives and Federal Hire*, Report for Federal Field Committee for Development Planning in Alaska, Anchorage, Alaska, 1967, p. 6.

[20] Late 1967 figures supplied during interview with Ray McClain, Executive Director, Anchorage Human Rights Commission, Anchorage, Alaska, May 8, 1968.

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[21] *The*
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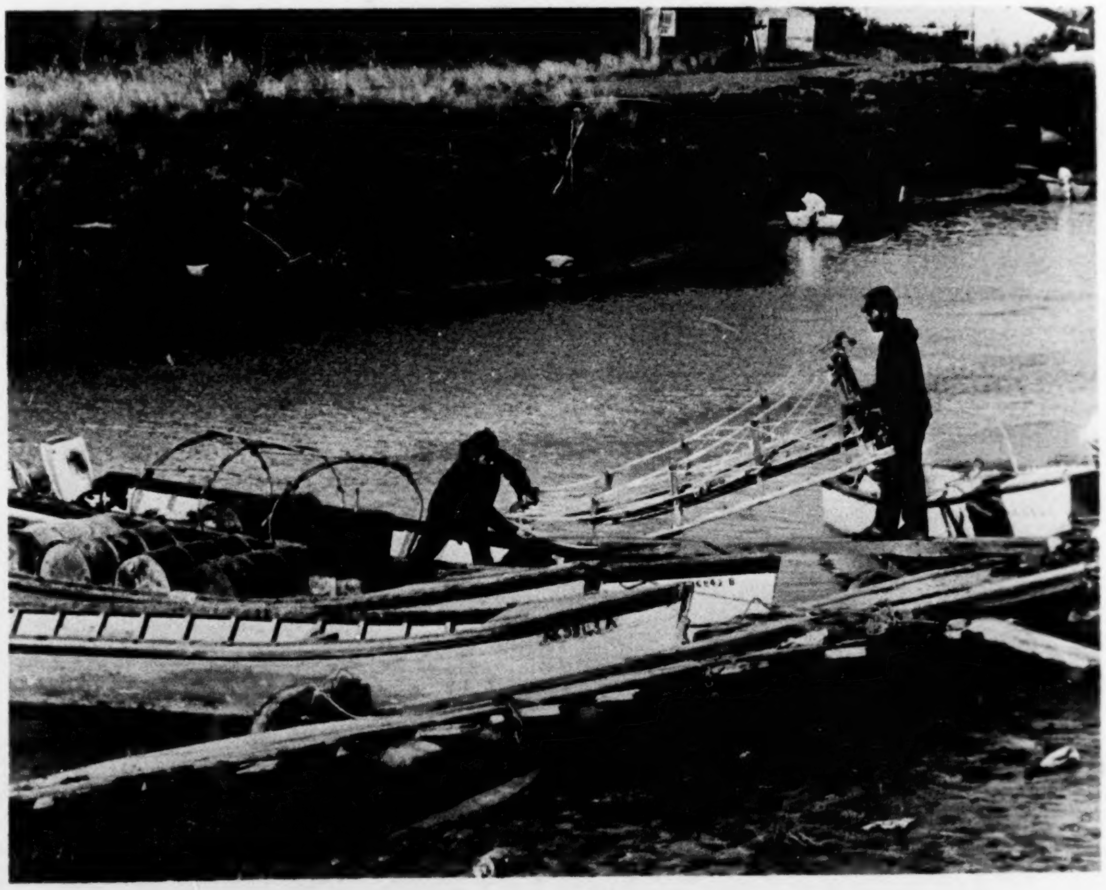
In urban areas, Native unemployment appears to be higher than among non-Natives. Lacking education and marketable skills, the villager is not usually equipped to compete in the job market. Another reason, according to the president of the Alaska Federation of Natives, is that "they're meek when they come out of the village. If somebody tells them 'no' when they go to ask for a job, they are not likely to come back. The few who make it--they're good."[21]



Loading Winter Supplies at Bethel, *Photo by Don Morrow U.S. Bureau of Indian Affairs*

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[21] *The Village People,* Anchorage Daily News, Anchorage, Alaska, 1966, p. 39.

Year-round jobs in most villages are few. Typically the opportunities are limited to positions such as school maintenance man, postmaster, airline station agent, village store manager, and possibly school cook or teacher aide. In these places, other adults gain income through the sale of furs, fish, or arts and crafts; find seasonal employment away from the villages as firefighters, cannery workers, or construction laborers; depend upon welfare payments, make their National Guard income stretch mightily; or, as is usually the case, (1) provide for the bulk of their food supply by fishing, hunting, trapping, and other activities of food gathering; and (2) rely upon a combination of means to obtain the cash needed for fuel, some food staples, and for tools and supplies necessary to the harvest of fish and wildlife.

Near some of the smaller communities are weather or flight stations or Air Force installations which offer a few job opportunities to villagers. In larger Native places such as Bethel, Nome, Kotzebue, or Barrow, there are a number of job opportunities like those found in urban areas.

Incomes of urban Natives are higher than for their rural counterparts, but substantially lower than for urban whites. Median income per capita in 1959 for urban Indians with income--no data exists for urban Eskimos and Aleuts--was $1,863;[22] for whites with income the same year it was $4,768.[23] Median per capita income for rural Natives with income was $1,204.[24] About one of five whites was without income; about one of three Indians was without income.

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[22] U. S. Bureau of the Census, *op. cit.*, p. 222.

[23] U. S. Bureau of the Census, *U. S. Census Population: 1960. General Social and Economic Characteristics, Alaska.* Final report PC(1)-3C, U.S. Government Printing Office, Washington, D. C., 1961, p.3-72.

[24] U. S. Bureau of the Census, *op. cit.*,p. 222.

[25] See Figure II-10. While new figures are available for the principal cities of Alaska, no newer data has been compiled on costs of food in villages.

Owing to the high cost of living in Alaska, the low median income of Alaska Natives cited understates the extent of poverty. Basic commodities cost 23 percent more in Anchorage than in Seattle in 1963, and up to 74 percent more in northern villages.[25] Explicit acknowledgement of the higher prices of goods and services in Alaska may be seen in the 25 percent cost-of-living allowance added to the basic pay of federal employees and higher minimum incomes allowed beneficiaries of federal antipoverty programs.[26]

Recent studies, while not being all-inclusive, suggest that the poverty implied for urban and rural Natives in the 1960 census persists. In urban Fairbanks in 1967, "most of the Indians. . are living in poverty. The Eskimos are poor to a lesser extent."[27] In the Eskimo village of Hooper Bay in 1966, just under half of the 70 village households averaged less than $2,000 cash income; only 15 percent received incomes of more than $3,000.[28] In the Indian village of Venetie in 1967, half of the families lived on incomes below $2,000.[29]

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[26] Typical of several such regulations is the U. S. Department of Labor, Manpower Administrative Order No. 2-68, "Criteria for Identifying Disadvantaged Individuals," Feb. 8, 1968, which provides for an additional 25 percent hardship allowance for Alaskans in excess of the poverty levels established in other parts of the United States.

[27] Frank Q. Sessions, *Fairbanks Community Survey, A Profile of Poverty*, SEG Report No. 16, University of Alaska, College, Alaska, 1967, p. 19.

[28] U. S. Public Health Service, *The Hooper Bay Community Health Study Part I*, Alaska Native Health Area Office, Anchorage, Alaska, 1966, p. 17.

[29] Calculated from data forms on all residents of Venetie obtained by the Superintendent, Fairbanks District, Bureau of Indian Affairs, Fairbanks, Alaska.

PUBLIC ASSISTANCE AND GENERAL ASSISTANCE

Income accrues to one of eleven adult Natives under categorical assistance programs administered by the state of Alaska. The most recent twelve months' average (1966-67) shows a total of 2,352 Native recipients of welfare funds.[30] On the average, during each month of this period:

--1,058 persons (and their 3,015 children) received Aid to Dependent Children totalling $134,196, or about $127 per family;

--983 persons received Old Age Assistance totalling $73,099, or about $74 per person;

--222 persons received Aid to the Disabled totalling $17,710, or about $80 per person; and

--89 persons received Aid to the Blind totalling $7,545, or about $84 per person.

Considered in comparison to the total population of the state, Alaska's Natives constitute a disproportionate ratio of those receiving welfare payments. While they make up only about 20 percent of the civilian resident population of the state, they make up, as may be seen in Figure 9, almost 65 percent of the Aid to Disabled recipients, almost 71 percent of the Old Age Assistance recipients, about 80 percent of the Aid to Dependent Children recipients, and nearly 90 percent of the Aid to the Blind recipients.[31]

Most Native recipients of state-administered public assistance programs appear to be residents of predominantly Native places rather than urban places. Available data from 1966 suggests that about 80 percent of all cases are in villages.[32]

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[30] Alaska Division of Public Welfare, "Tabulation of the Proportion of Native and non-Native Recipients on Public Assistance by Caseload and Welfare Districts," 12-month average 1966-67.

[31] *Ibid.*

[32] Beneficiaries in predominantly Native places, virtually all of whom are Natives, totaled 1,756 in October, 1966. (*Ibid.*, October, 1966.) During the fiscal year 1966, the monthly average of Native recipients was 2,285 in all places. (*Ibid.*, Fiscal Y 1966.)

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There are today, as may be seen in Figure 9, a somewhat smaller number of Native persons receiving Aid to Dependent Children and Aid to the Blind than there were five years ago. There has been no significant change in the number of persons receiving Old Age Assistance. Over the same period of time, the percentages of the total population receiving assistance under the first two programs who are Natives has declined--substantially in the case of Aid to Dependent Children. The change is insignificant in the case of Old Age Assistance. No program of Aid to the Disabled existed before 1964.

FIGURE 9

NATIVE BENEFICIARIES IN PROGRAMS OF PUBLIC ASSISTANCE, SELECTED DATES 1961-1967

Assistance Program	January 1961	January 1963	October 1964	October 1965	12-month Average 1966-67
	Number of Recipients Who are Natives				
Old Age Assistance	981	977	957	959	983
Aid to the Blind	99	100	101	102	89
Aid to the Disabled	No Program		116	149	222
Aid to Dependent Children	1,134	1,116	1,093	1,037	1,058
			2,267	2,247	2,352
	Percent of Recipients Who are Natives				
Old Age Assistance	69%	71%	70%	70%	71%
Aid to the Blind	95	97	93	93	90
Aid to the Disabled	No Program		61	63	65
Aid to Dependent Children	93	90	84	85	80

Source: Alaska Division of Public Welfare, Department of Health and Welfare, Juneau, Alaska.

Welfare payments also go to needy Natives who are not eligible for categorical programs of public assistance administered by the state. These payments (which correspond to general relief afforded the non-Native sector by the state) are made under the general assistance program of the Bureau of Indian Affairs.

During fiscal 1967 there were 2,814 unduplicated cases--heads of families or other adults--who received general assistance funds. Including children or other dependents, 10,406 persons benefited from the program.[33] Amounts of general assistance payments vary with the circumstances of each recipient and the duration of assistance. Total expenditures of $1,200,000 in the year, however, averaged to about $115 per person over the year.[34]

About three of four of the adults receiving assistance are classified by the Bureau as employable. For most of them, relief given is temporary. The unemployables include those persons eligible for state-administered welfare programs whose cases are pending and those persons who are in some way disabled for work (illness or other temporary incapacity) but not eligible under the state's Aid to the Disabled program. For many of these, but also for some employables in places where no work is available, assistance will be of longer duration.[35]

Sixty-one percent of the cases received assistance for three months or less, and two-thirds of these received it for two months or less (See Figure 10). Eighty-one percent received help less than six months. Almost five percent received assistance throughout the year.

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[33] U. S. Bureau of Indian Affairs, Chart of "Composite General Assistance Fiscal Year 1967," Juneau Area Office, Juneau, Alaska, 1967.

[34] U. S. Bureau of Indian Affairs, *The First Alaskans--100 Years Later*, A Progress Report to the Commissioner of Indian Affairs, Juneau Area Office, Juneau, Alaska, 1967.

[35] Letter and enclosed chart from Gordon Cavnar, Area Social Worker, U. S. Bureau of Indian Affairs, Juneau Area Office, Juneau, Alaska, April 24, 1968.

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FIGURE 10

DURATION OF GENERAL ASSISTANCE EXTENDED TO NATIVE BENEFICIARIES, FISCAL YEARS 1963-1967

	Number of Cases				
	FY 1963	FY 1964	FY 1965	FY 1966	FY 1967
3 months or less	1,113	1,407	1,335	1,499	1,717
4 to 6 months	461	528	519	581	618
7 to 9 months	161	294	237	198	285
9 to 12 months	359	369	267	223	194
	2,094	2,598	2,358	2,501	2,814

Percent of Total Cases

	FY 1963	FY 1964	FY 1965	FY 1966	FY 1967
3 months or less	53%	54%	57%	60%	61%
4 to 6 months	22	20	22	23	22
7 to 9 months	7	11	10	8	10
9 to 12 months	17	14	11	9	7

Source: Bureau of Indian Affairs, U. S. Department of the Interior, Juneau, Alaska, Chart of "Composite General Assistance", Juneau Area Office, Juneau, Alaska, 1963-67.

FIGURE 11

GENERAL ASSISTANCE EXPENDITURES
BY WINTER AND SUMMER QUARTERS*
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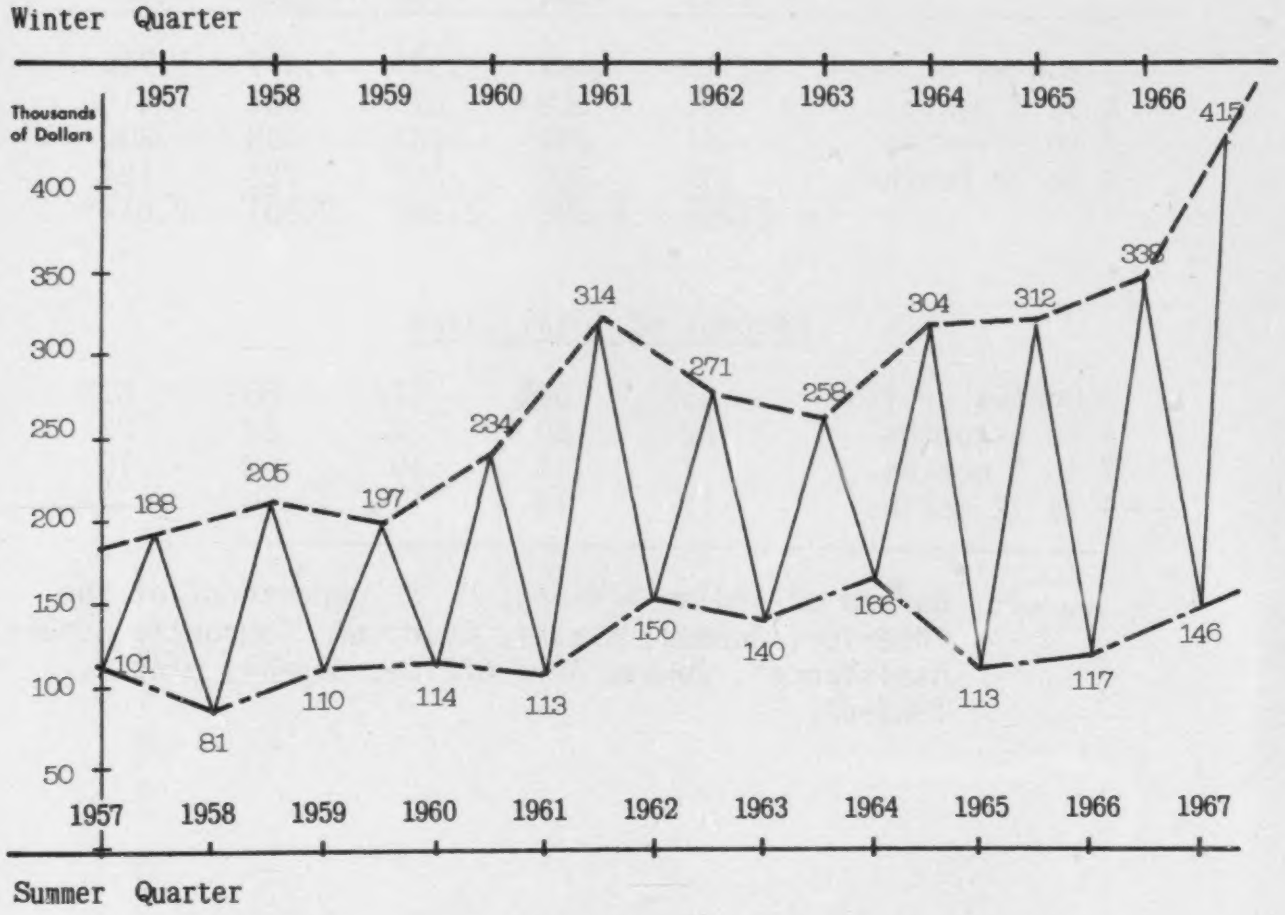

* Summer Quarter: July, August, September;
Winter Quarter: January, February, March.

Source: U. S. Bureau of Indian Affairs, Juneau Area Office, Juneau, Alaska.

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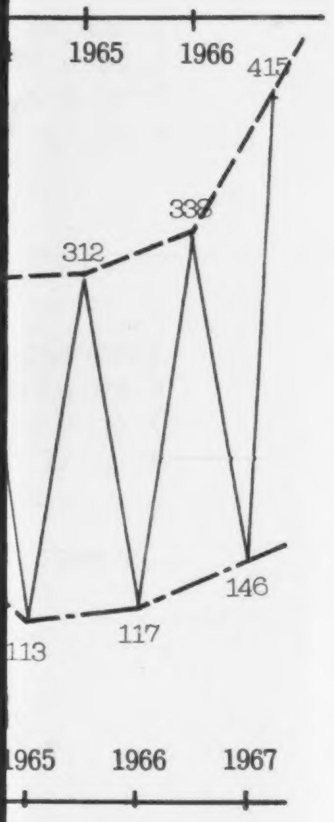

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Seasonal variations in general assistance expenditures (shown in Figure 11) are indicators of the temporary nature of most assistance rendered, and the responsiveness of the Native people to job and food-gathering opportunities--both greatly expanded in summer. In the winter months of 1967 when expenditures and the caseload were highest, there were three and one-half times as many recipients who were classified as employable as there were in the summer months of 1967 when expenditures and the caseload were lowest.[36]

In fiscal 1967, almost 30 percent of the Natives receiving general assistance were residents of urban areas--especially Anchorage and Fairbanks. These two cities having about 12 percent of the state's Native population accounted for more than 25 percent of the beneficiaries of the Bureau's relief program. With a combined Native population about the same as the four largest Eskimo towns of the West, they had more than three times as many different beneficiaries (Figure 12).

In fiscal 1967 there were nearly one-third more unduplicated cases than five years earlier--a period in which the Native population grew probably by half that increase.

FIGURE 12

A COMPARISON OF NUMBERS OF GENERAL ASSISTANCE BENEFICIARIES, FISCAL YEAR 1967

Four Largest Non-Native Places				Four Largest Native Places			
	Population		Native		Population		Native
Place	Total	Native	Cases	Place	Total	Native	Cases
Anchorage	135,000	4,500	436	Nome	2,450	1,534	112
Fairbanks	43,450	2,050	302	Barrow	1,811	1,651	23
Juneau	12,500	1,950	122	Bethel	1,750	1,530	86
Ketchikan	10,855	1,605	139	Kotzebue	1,740	1,513	22

Source: U. S. Bureau of Indian Affairs, Juneau Area Office, Juneau, Alaska.

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[36] *Ibid.*

EDUCATION

Adult Natives today are likely to have less than an eighth grade education. Of the nearly 25,000 non-white, non-Negro persons fourteen years or older in 1960--nearly all of whom were Natives--50 percent had completed no more than the sixth grade; 21 percent had completed the seventh or eighth grades; another 14 percent had gone to high school, but only 8 percent had completed their work; and 2 percent went to college, but only a small fraction of 1 percent had completed four years or more.[37]

Low though these levels are (especially when compared with a white Alaskan median in 1960 of 12.4), they portray a grade level of achievement higher than is suggested by test scores. Standard metropolitan tests administered in 1965 to students in Bureau of Indian Affairs primary schools show levels of performance in the upper primary grades one to two grade levels below medians established nationally.[38] However, a caution is in order: standardized tests, while valuable indicators of achievement among Native peoples, are based upon backgrounds and experiences far different from theirs, so comparisons with national norms are less meaningful than they may appear to be.

Mt. Edgecumb

Educational levels are rising as educational opportunities increase. No statewide survey has been made since 1960, but recent data compiled for antipoverty programs for 21 villages show 31 percent of Alaska Natives 25 years old or older who have completed the eighth grade or more of school--contrasted with only 11 percent statewide in 1960.[39] A further indicator of trends is the increasing number of Native persons enrolled in schools and courses above the eighth grade level. The number in boarding high schools has nearly tripled since 1960; and the number in higher education and vocational training has nearly tripled, too.[40]

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[37] These figures are derived by subtracting Negroes from non-white. They represent 44,763 people of whom 42,522 were Alaskan Natives. U. S. Bureau of the Census, *op. cit.*, p. 200; and *General Social and Economic Characteristics of Alaska*, p. 3-103.

[38] Worksheets prepared for the U. S. Bureau of Indian Affairs by Emil Kowalcyzk, Education Specialist, Juneau Area Office, Juneau, Alaska.

[39] Calculated from worksheets supplied by the Alaska State Community Action Program, Inc., Anchorage, Alaska, 1967.

[40] Information compiled by the Federal Field Committee for Development Planning in Alaska from the U. S. Bureau of Indian Affairs, *Survey of Students Attending Schools of Higher Learning*, Juneau Area Office, Juneau, Alaska, 1965-1966.

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Mt. Edgecumbe Boarding School, Sitka, *Photo by Don Morrow, BIA*

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Mountain Village Day School, *Photo by Don Morrow, BIA*

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In the school year ending mid-1967 there were 18,067 Native young people enrolled in schools in Alaska.[41] Nearly two of three were attending schools in villages--places whose population was composed of half or more Natives. There were 6,207 enrolled in 82 schools operated by the Bureau of Indian Affairs and 2,381 enrolled in 48 schools directly operated by the state. Others were enrolled in schools operated by independent school districts, private or denominational groups, or by the state under Johnson-O'Malley or Fish and Wildlife funding.

Even with gains registered as the result of expanding educational opportunities, the overall educational level remains low.

For most Alaska Natives, the problem was put succinctly in 1965 by the now Commissioner of Indian Affairs when he pointed out that though cultural and language differences and residence at remote locations had contributed to difficulties faced by Native people today, there was another factor: "They are suffering", he said, "from a program of education that is too little and too late."[42]

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[41] *Villages in Alaska and Other Places Having a Native Population of 25 or more, Loc. Cit.*

[42] Remarks of Robert L. Bennett, Area Director, U. S. Bureau of Indian Affairs, to the Fifth Biennial Convention of the Alaska Congress of Parents and Teachers, Ketchikan, Alaska, October 7-9, 1967.

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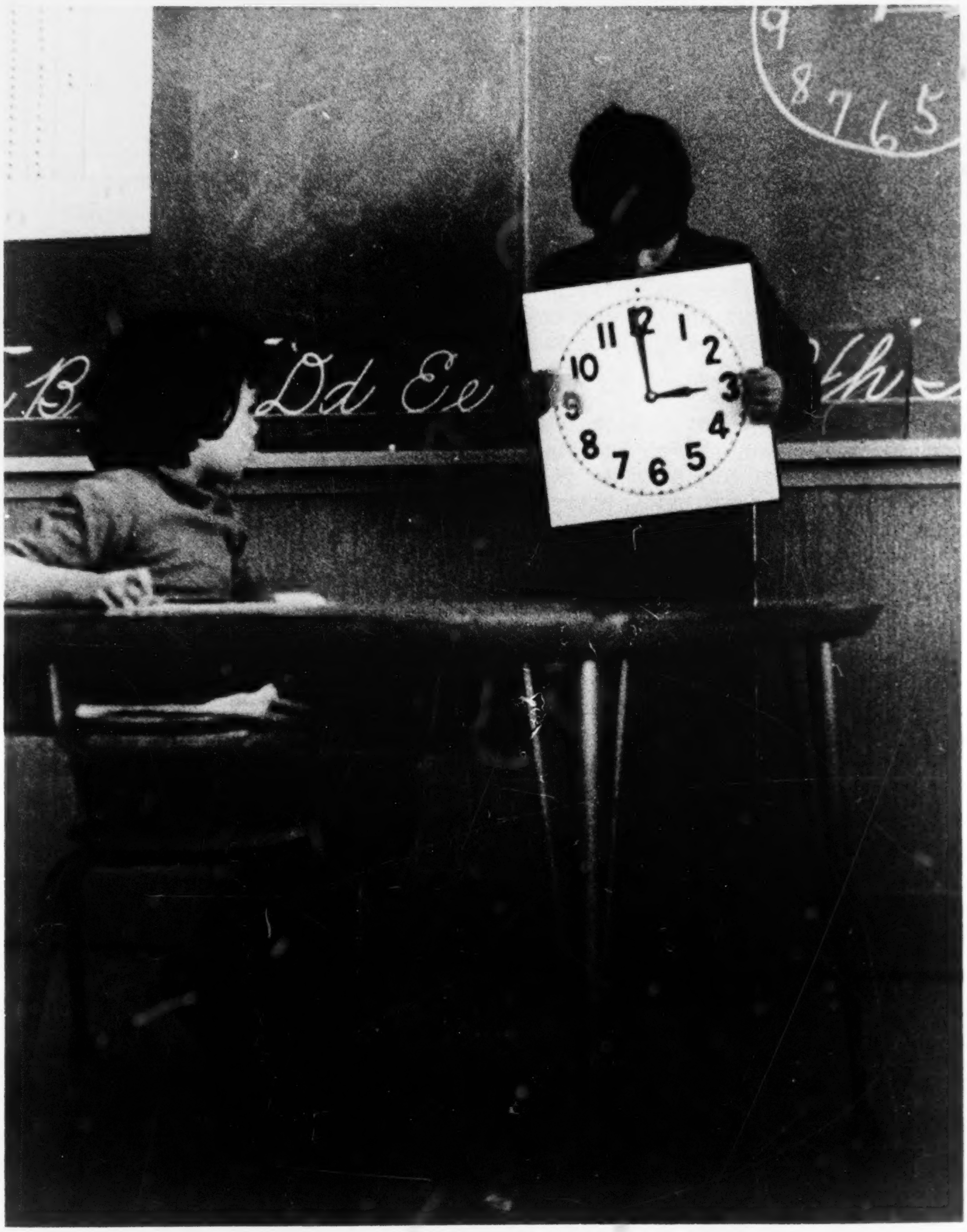
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Learning Time
Photo by: Don Morrow
U. S. Bureau of Indian Affairs

HEALTH

The health status of Alaska Natives is indicated by the fact that the average age of death is about half of that of other Americans. In 1966, the average age of death among Natives was 34.5 years, a slight increase over the preceding year.[43] And by any other measure, the health status of Natives is inferior to that of other Alaskans.

Mortality

The crude death rate of Alaska Natives is more than twice the rate of white Alaskans. There were 478 Native deaths in 1966, or 9.6 deaths per thousand estimated population; in the white population there were 810 deaths or 3.8 deaths per thousand.[44] While the Native death rate is high, and a fraction higher than four of the past seventeen years, it is almost half what it was in 1951. As may be seen in Figure 13, there has been no significant change in the Native death rate since 1958.

The three principal causes of death in the Native population in 1966 were accidents, influenza and pneumonia, and diseases of early infancy. The death rate of Natives as a result of influenza and pneumonia was ten times the rate of Alaska whites; as a result of accidents, three times; and suicides, double the rate.[45]

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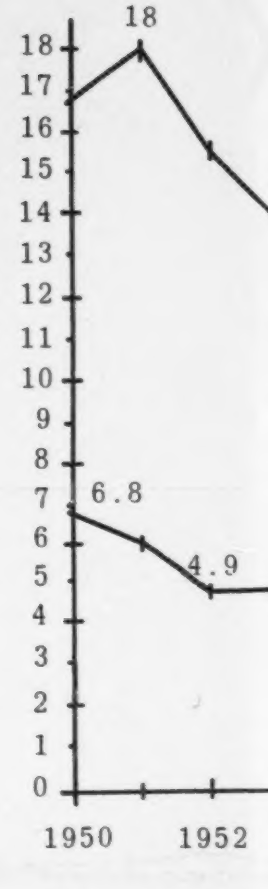

* Deaths per 10

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[43] U. S. Public Health Service, Alaska Native Health Area Office, Program Analysis Branch, *Alaska Native Vital Statistics*, Anchorage, Alaska, 1966, p. ii. Life expectancy data may be a more accurate measure of health status among Alaska Natives than average age of death owing to the high rate of infant mortality, according to Ted Vieira, Chief, Program Analysis Branch, Office of Program Planning and Evaluation, Alaska Native Health Area Office, U. S. Public Health Service, Anchorage, Alaska. "Life tables show during 1959-61, Alaskan Natives had a life expectancy of 60.4 years at birth, 64.4 years for those who reached the first birthday, and median length of life of 68.3 years as compared to 69.7 years, 70.6 years, and 74.1 years for the U. S. population respectively (1960)." (U. S. Public Health Service, Alaska Native Health Area Office, Program Analysis Branch, *Anchorage Area Statistical Report: Fiscal Year 1966*, Anchorage, Alaska, 1967, p. iii)

[44] Alaska Department of Health and Welfare, Branch of Statistical Services, *Alaska's Vital Statistics*, Juneau, Alaska, Feb. 1, 1968, p. 33.

[45] *Ibid.*, p. 18.

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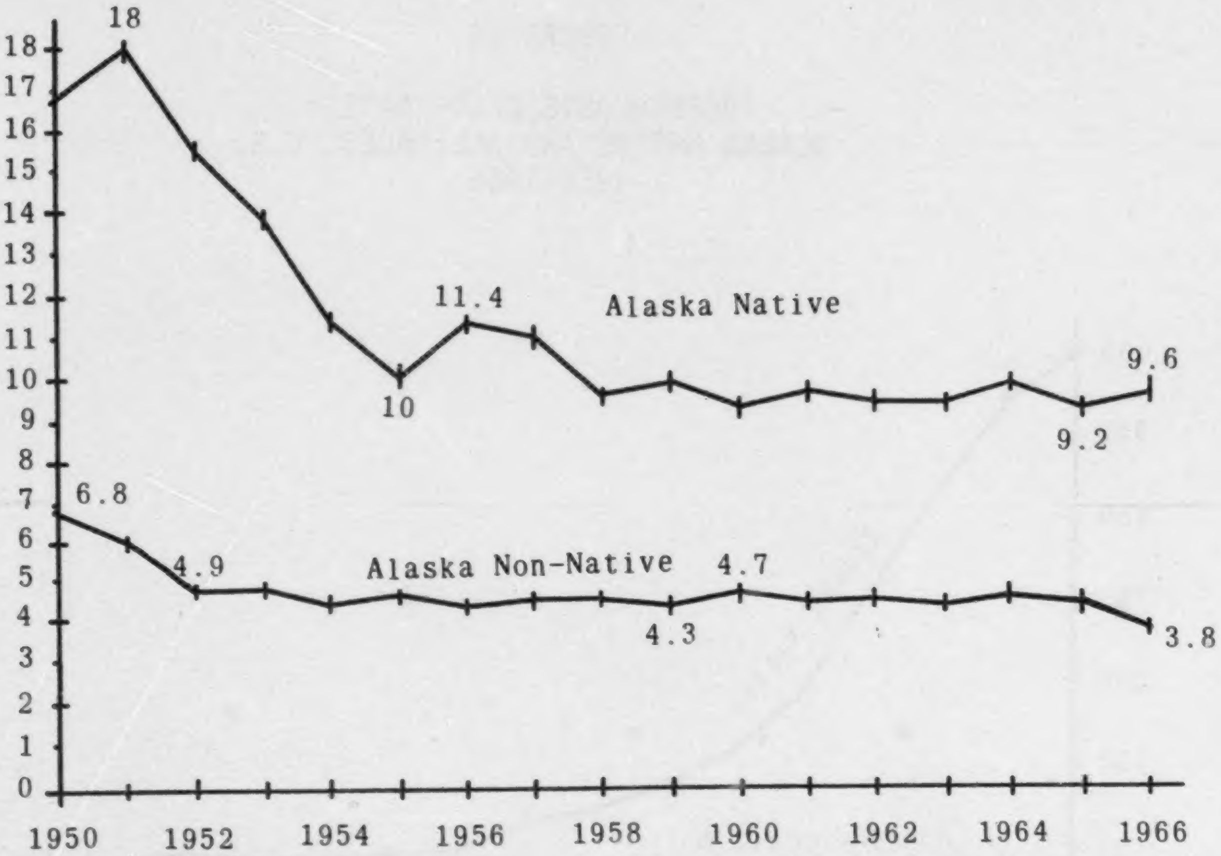
FIGURE 13

DEATH RATES,* ALASKA NATIVE AND NON-NATIVE,
1950-1966



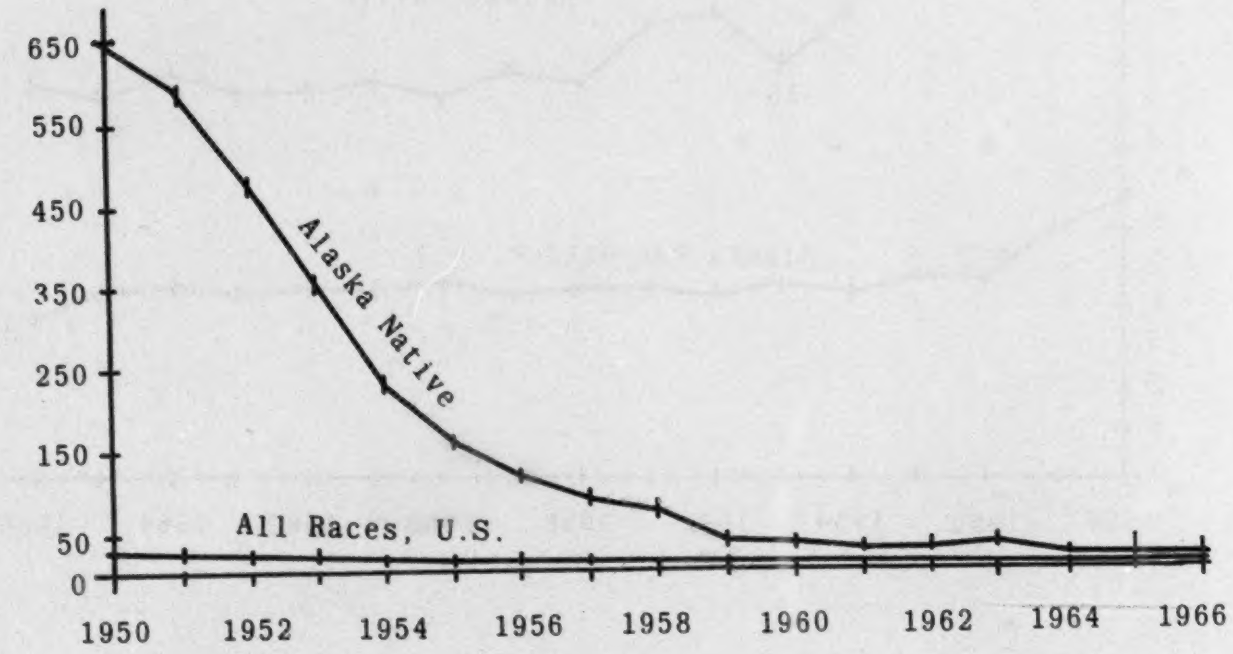
* Deaths per 100,000 population.

Source: Program Analysis Branch, Office of Program Planning and Evaluation, Alaska Native Health Area Office, U. S. Public Health Service, Anchorage, Alaska.

Since 1950 the number of people who died from tuberculosis has declined from 222 in that year to 6 in 1966. Death rates from tuberculosis are illustrated in Figure 14. Half as many died in 1966 from other infectious diseases as in 1950, and fewer died from influenza and pneumonia. Twice as many persons died as a result of accidents, suicides, and alcoholism in 1966 as in 1950, however, and three times as many persons died of homicide.[46] In these years the Native population grew by less than 50 percent. Alaska Native deaths caused by violence over the past seven years are illustrated in Figure 15.

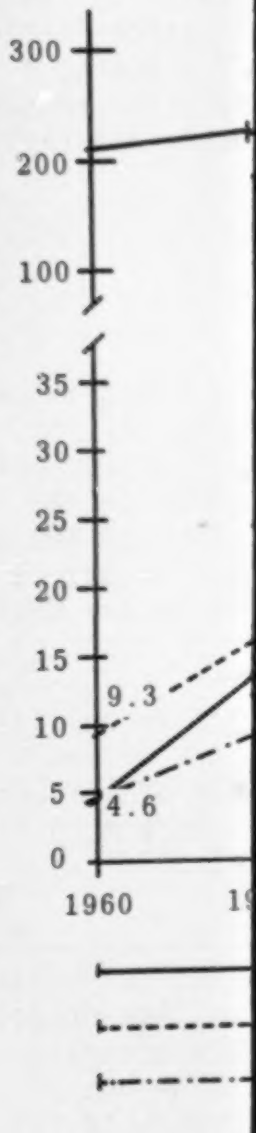
FIGURE 14

TUBERCULOSIS DEATH RATES*
ALASKA NATIVE AND ALL RACES, U.S.
1950-1966



* Deaths per 100,000 population.

Source: Program Analysis Branch, Office of Program Planning and Evaluation, Alaska Native Health Area Office, U. S. Public Health Service, Anchorage, Alaska.



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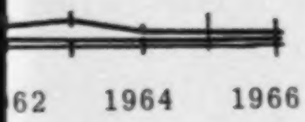

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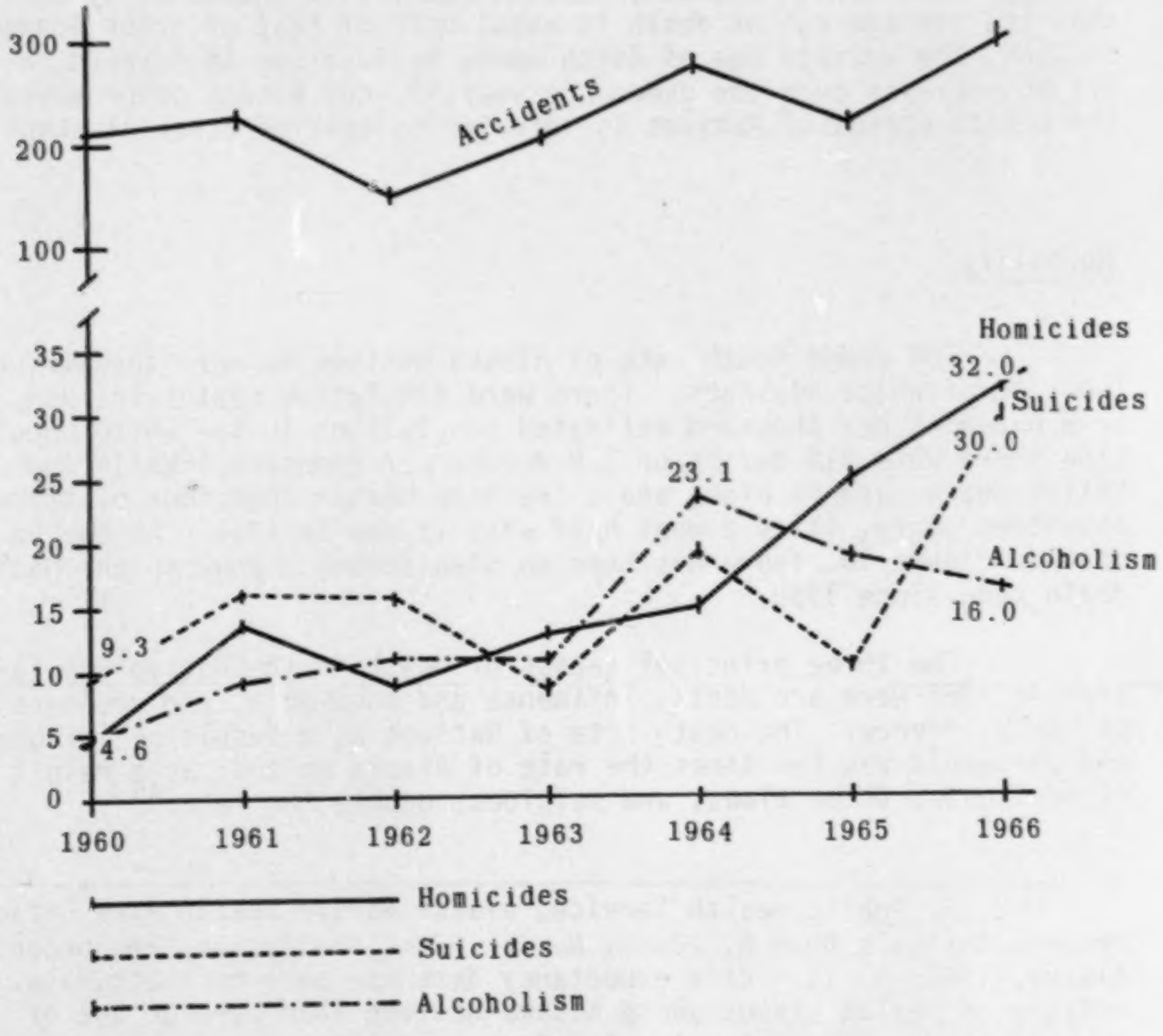
FIGURE 15

ALASKA NATIVE DEATHS* CAUSED BY VIOLENCE



* Deaths per 100,000 population.

Source: Program Analysis Branch, Office of Program Planning and Evaluation, Alaska Native Health Area Office, U. S. Public Health Service, Anchorage, Alaska.

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[46] *Ibid.*, p. 33.

The infant mortality rate of Alaska Natives, a significant factor in the overall death rate, is also more than twice the rate of white Alaskans. More than one-fifth of the total Native deaths in 1966 occurred in persons under one year old; these 102 deaths resulted in an infant death rate of 52 per thousand live births. Among white Alaskans the rate was 22. Except for 1963, the present high rate of infant mortality of Natives is lower than at any time during the past 17 years.[47] During this period, as may be seen in Figure 16, the rate was reduced by nearly half.

Five-year averages show that deaths to Native infants one-to-six days old (while most infants are still in hospitals) occur at a rate only slightly greater than that for white Alaskans. When the infants return to their village home environments, the rate increases. Among Native infants 7 to 27 days old, the rate is three times that for whites.[48] Among Native infants one to five months old, the rate is four times that of whites. And among Native infants six to eleven months old, the death rate is more than twelve times that of white Alaskans.[49]

Principal causes of Native infant deaths in 1966 were pneumonia, diseases of early infancy, infectious diseases, and accidents. In only one category of cause--congenital malformations--was the Alaska Native rate comparable to the rate of white Alaskans.[50]

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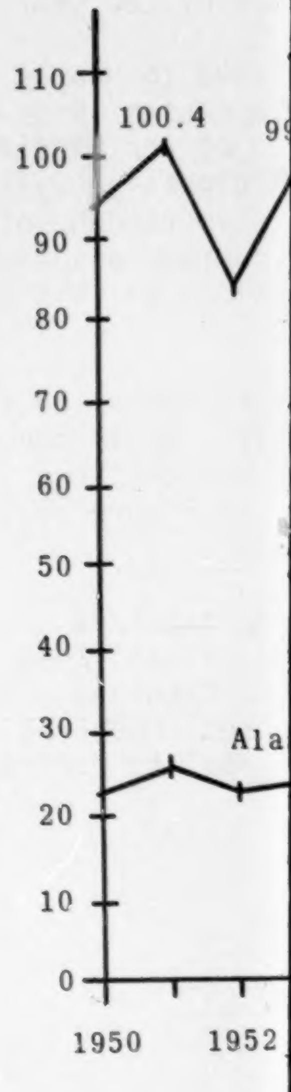

* Infant deat

Source: Alaska
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[47] *Ibid.*

[48] These two periods combined into a month show Native death rate (23.1) and white death rate (10.8) to be more nearly comparable. (*Ibid.*)

[49] *Ibid.*, p. 43.

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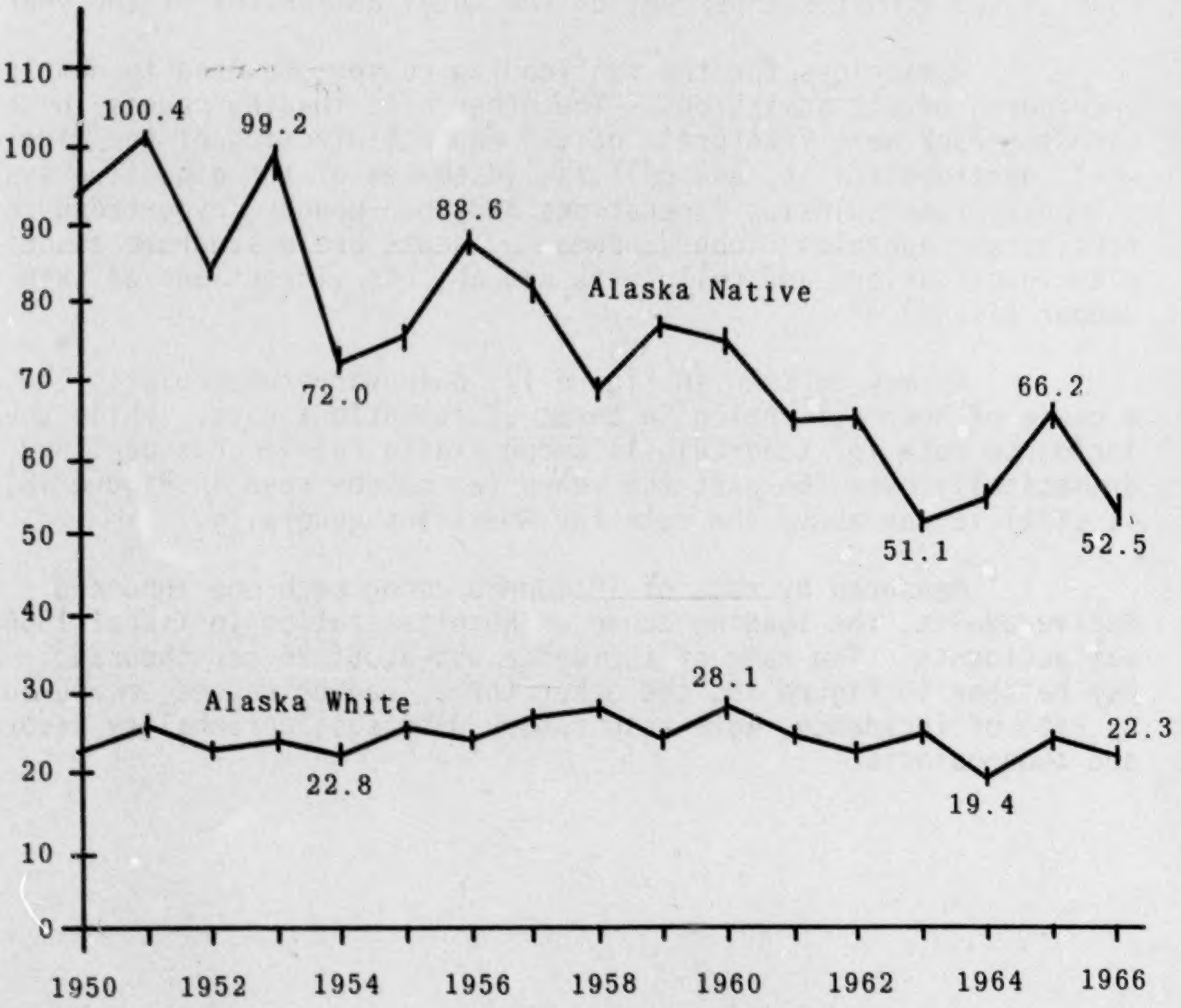
FIGURE 16

INFANT MORTALITY RATES* ALASKA NATIVE AND WHITE,
1950-1966



* Infant deaths per 1,000 live births

Source: Alaska Department of Health & Welfare, Branch of Statistical Services, *Alaska Vital Statistics,* Juneau, Alaska, 1968, p. 20.

Sickness and Hospitalization

Bronchopneumonia was the leading cause of hospitalization among Alaska Natives in fiscal year 1966. The 582 patients admitted constituted almost six percent of the total admissions of the year.[51]

Admissions for the ten leading causes amounted to nearly one-fourth of all admissions. The other nine leading causes in descending rank were fractures, otitis media (infection of the middle ear), gastroenteritis, and colitis, (diseases of the digestive system) pulmonary tuberculosis, lacerations and open wounds, hypertrophy of tonsils and adenoids, lobar pneumonia, acute brain syndrome associated with intoxication, and cellulitis and abscess (infections of skin and deeper tissue).[52]

As may be seen in Figure 17, pulmonary tuberculosis led as a cause of hospitalization in terms of in-patient days. While the incidence rate for tuberculosis among Alaska Natives has declined dramatically over the past ten years (as may be seen in Figure 18), it still is far above the rate for Americans generally.

Measured by rate of incidence among each one thousand Native adults, the leading cause of hospitalization in fiscal 1966 was accidents. The rate of incidence was about 26 per thousand. As may be seen in Figure 19, the other three leading causes, measured by rate of incidence, were respiratory diseases, personality disorders and tuberculosis.

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[51] U. S. Public Health Service, Division of Indian Health, *Leading Causes of Hospitalization of Alaskan Natives*, Anchorage, Alaska, April 23, 1968, p. 2.

[52] *Ibid.*

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FIGURE 17

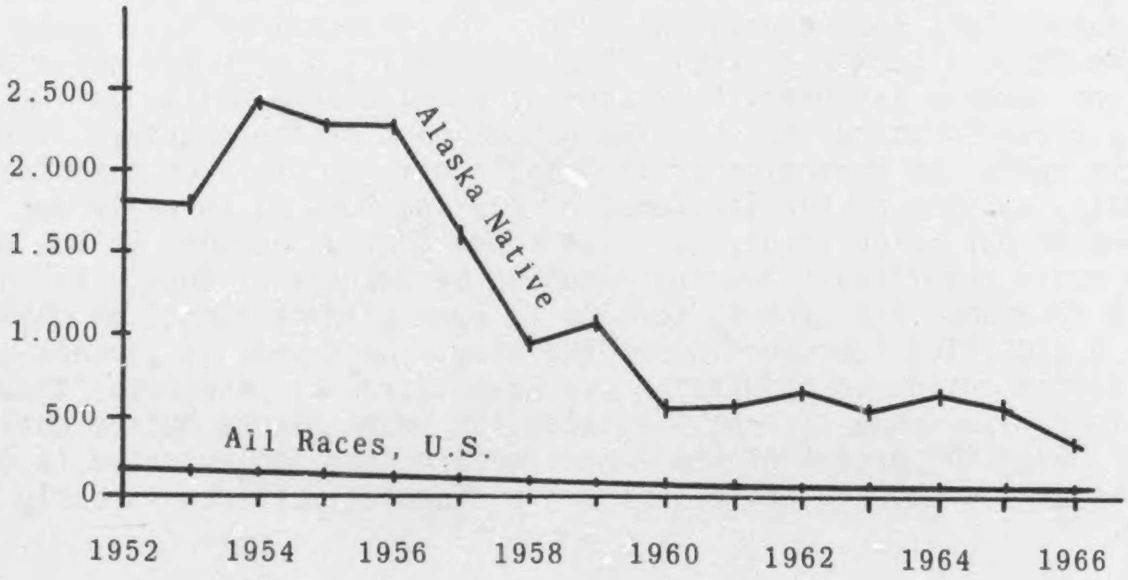
TEN LEADING CAUSES OF HOSPITALIZATION
OF ALASKA NATIVES, BY NUMBER OF ADMISSIONS,
FISCAL YEAR 1966

Cause	Number of Admissions	Inpatient Days
Total Admissions	10,068	196,061
Admissions for Leading Causes	2,729	68,269
1. Bronchopneumonia	582	6,810
2. Fractures	323	8,492
3. Otitis Media	312	5,424
4. Gastroenteritis and Colitis (except Ulcerative)	305	5,790
5. Pulmonary Tuberculosis	278	29,903
6. Lacerations and Open Wounds	259	3,157
7. Hypertrophy of Tonsils and Adnoids	218	3,470
8. Lobar Pneumonia	172	2,639
9. Acute Brain Syndrome Assoc. with Intoxication	154	1,311
10. Cellulitis & Abscess w/o mention of Lymphangitis	126	1,273

Source: U. S. Public Health Service, Division of Indian Health, *Leading Causes of Hospitalization of Alaskan Natives*, Anchorage, Alaska, April 23, 1968, p. 2.

FIGURE 18

RATE OF INCIDENCE* FOR TUBERCULOSIS
ALASKA NATIVE AND ALL RACES, U.S.
1952-1966



* Rate per 100,000 population

Source: Program Analysis Branch, Office of Planning Evaluation, Alaska Native Health Area Office, U. S. Public Health Service, Anchorage, Alaska.

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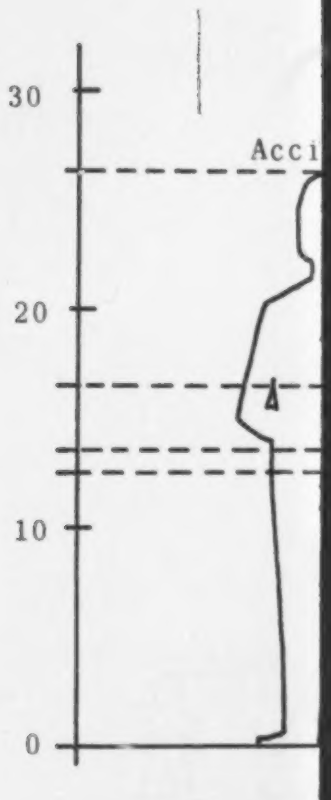

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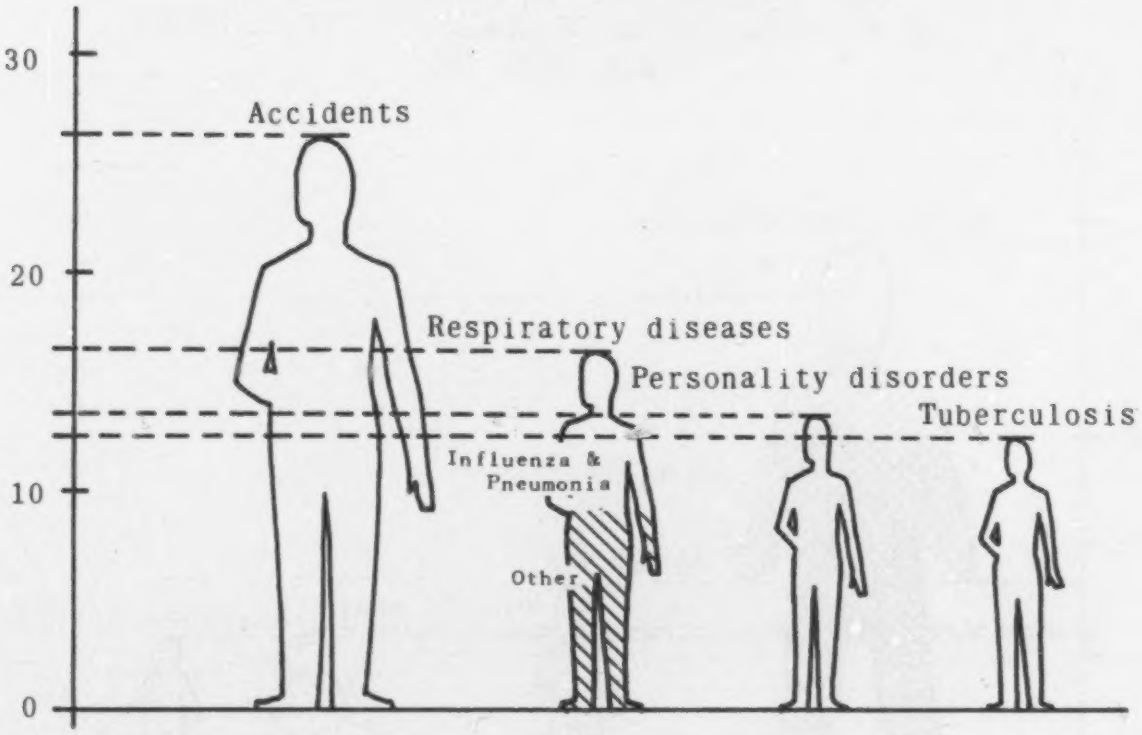
FIGURE 19

RATE OF INCIDENCE* BY FOUR MAJOR CAUSES
OF HOSPITALIZATION OF ALASKA NATIVE ADULTS,
FISCAL YEAR 1966

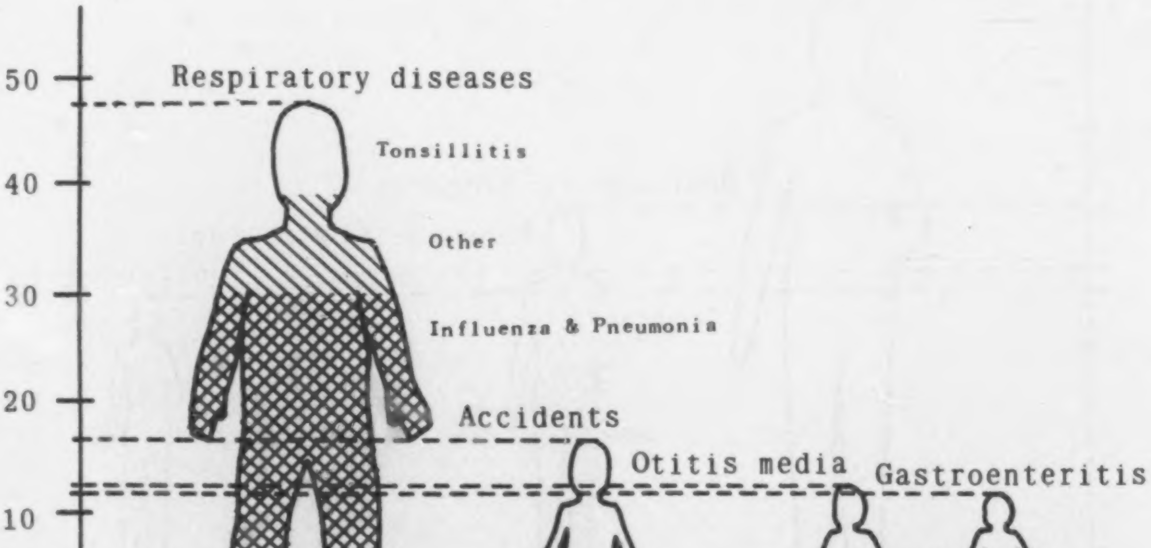


* Rate per 1,000 Native adults.

Source: Program Analysis Branch, Office of Planning Evaluation, Alaska Native Health Area Office, U. S. Public Health Service, Anchorage, Alaska.

FIGURE 20

RATE OF INCIDENCE* BY FOUR MAJOR CAUSES
OF HOSPITALIZATION OF ALASKA NATIVE CHILDREN
FISCAL YEAR 1966



* Rate per 1,000 Native children.

Source: Program Analysis Branch, Office of Planning Evaluation, Alaska Native Health Area Office, U. S. Public Health Service, Anchorage, Alaska.

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Native children require hospitalization because of respiratory diseases more often than for any other single category of health problem (See Figure 20). In fiscal 1966 the rate of incidence per thousand was about 46. Three other major causes of hospitalization among children by rate of incidence were accidents, otitis media, and gastroenteritis.

The consequences of respiratory infection and otitis media are damaged and handicapped children. The director of the Alaska Native Medical Center writes: "Bronchiectasis, a very serious type of lung damage, is seen with frequency among Alaska Native children. It is a rarity among the children of the rest of the country. Chronic otitis media, an infection of the middle ear, occurs even more frequently, causing a high incidence of hearing loss at an early age. In one of our large studies, it was shown that 38 percent of the children had a significant hearing handicap by the age of four. All of these diseases, and others, combine to keep a large number of children sick a significant proportion of the time. Last year 15 percent of the entire childhood population was hospitalized." She adds:"there is higher incidence of mental retardation among Alaska Native children. Over 50 percent of the mental retardation demonstrated is due to residual damage of acute infectious diseases suffered in early life."[53]

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[53] From a draft statement prepared by Martha Wilson, M.D., Medical Director, Alaska Native Medical Center, Anchorage, Alaska, for presentation to a Senate Subcommittee in the summer of 1968.

Otitis Media and upper respiratory infections were the first and second most frequently reported notifiable diseases among all Alaska Natives in 1967. Children four years of age and younger accounted for nearly two-thirds of the Otitis Media cases and about half of the upper respiratory infection cases. As illustrated in Figure 21, they were closely followed by streptococci sore throat. Others in the top ten notifiable diseases, ranked in descending order, were impetigo, pneumonia, dysyntery, gonorrhea, influenza, conjunctivitis, and gastroenteritis.

FIGURE 21

LEADING NOTIFIABLE DISEASES
AMONG ALASKA NATIVES, 1967

Disease	Reported Cases
Otitis Media	2,834
Upper Respiratory Infection (URI)	2,525
Strep. Sore Throat	1,998
Impetigo	968
Pneumonia (excluding Newborn)	847
Dysentery (excl. Amebiasis and Baciliary)	742
Gonorrhea	587
Influenza	452
Conjunctivitis	410
Gastro-enteritis	182

Source: U. S. Public Health Service, Alaska Native Health Area Office, Office of Program Planning and Evaluation, "Report of Notifiable Diseases, 1967."

If problems of teeth among Natives were ranked with other health problems, the ranking would be high. As the Anchorage area office of the Division of Indian Health points out: "Dental diseases are nearly universal among the Alaska Native people. Dental caries experience and its sequelae of pain, infections, and loss of teeth is extremely high. Peridontal diseases are also very prevalent among Alaska Native people. Untreated orthodontic problems reach staggering proportions in our young people."[54]

"Most of the deplorable dental conditions," according to the director of the Division of Indian Health, "are due to a lifetime of neglect, lack of understanding of measures to be taken to prevent dental diseases, and inadequate amounts of dental resources" to serve Indians and Alaska Natives.[55]

Problems of mental health are major problems of Alaska Natives today. As noted above, personality disorders rank third in incidence in the population. Acute brain syndrome associated with intoxication is eighth ranked cause for admission to hospitalization. And over a 16-year period in which the population grew by about 50 percent, the number of suicides and persons dying of alcoholism doubled.

Mental distress among Alaska Natives is the result of one culture imposing itself on another, in the opinion of the state's former director of the Division of Mental Health. "Originally the Natives placed value on certain things. Then the white man came and the Native found the values he had in the first place are part of his downfall when he is adapting to this new culture.[56]

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[54] U. S. Public Health Service, Alaska Native Health Area Office, Program Analysis Branch, *Operating Plan Anchorage Area: Fiscal Year 1968*, p. 32.

[55] U. S. Congress, House, Committee on Interior and Insular Affairs, *Policies, Programs, and Activities of the Department of the Interior Part II*, 97th Congress, 1st Session, 1967, p. 43.

[56] Anchorage Daily News, Anchorage, Alaska, *op. cit.*, p. 41.

If mental health problems are broadly construed to include not only mental illness and alcoholism, but also child neglect and delinquency and other behavioral problems, according to the Division of Indian Health's chief psychiatrist, then mental health problems are the major health problem of Alaska Natives today.[57]

Broadly told, the poor physical health of Alaska Natives is principally the result of environmental conditions in villages--housing that is overcrowded and insufficiently ventilated, water supplies that are impure, and inadequate waste disposal systems. Contributing factors are general malnutrition, a too-frequent lack of understanding of sanitary practices among villagers, and the inability of the Division of Indian Health--owing to limited appropriations and the remoteness of villages--to provide a level of services appropriate to needs.[58]

While medical efforts--preventing disease where possible, treating diseases and injuries, teaching good health practices--have resulted in substantial gains, for many of the remaining problems there are no preventive medical measures to be taken; there is no means of immunization, for instance, against respiratory diseases or otitis media. Significant reduction in the incidence of many of Alaska's remaining health problems must be sought in improvement of the socio-economic conditions under which Alaska Natives live.[59]

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[57] Interview with Dr. Joseph Bloom, Chief, Area Mental Health Unit, U. S. Public Health Service, Division of Indian Health, Anchorage, Alaska, May 10, 1968.

[58] U. S. Public Health Service, Alaska Native Health Area Office, Program Analysis Branch, *op. cit.*

[59] Interview with Martha Wilson, M.D., Medical Director, Alaska Native Medical Center, Anchorage, Alaska, May 10, 1968.

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Photo by U. S. Public Health Service

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NATIVE ORGANIZATIONS

For nearly fifty years the Alaska Native Brotherhood and Sisterhood were the only organizations of Alaska Natives. Their membership was made up of Indians of southeastern Alaska. Then in 1961, Inupiat Paitot, made up of northern Eskimos, was formed; in 1962 the Tanana Chiefs' Council, composed of Interior Indians' village chiefs, was organized.

Explaining the organization of new groups in the early 1960's, Eskimo editor Howard Rock said, "The reason for the formation of these groups, of course, was that we had begun to realize that we, as Native people of Alaska, had many problems. We also found that by speaking as a group, we were heard. As a result, some good things began to come our way. Having tasted the fruits of our labors, we are encouraged to try to perpetuate the existence of these organizations."[60]

The real growth in the number of Native associations came in 1965 and 1966, with much of the stimulus coming from the issue of land claims and protests. There are now 21 regional or community organizations and a statewide association, the Alaska Federation of Natives.

The regional groups are: Arctic Slope Native Association, Copper River Indian Association, Chugach Native Association, Village Council Presidents' Association, Tanana Chiefs' Association, Alaska Native Brotherhood and Tlingit-Haida Central Council, Kodiak Area Native Association, Northwest Alaska Native Association, Arctic Native Brotherhood, Alaska Peninsula Native Association, Bristol Bay Native Association, Aleut League, and Lower Kenai Native Association. Community organizations are: Cook Inlet Native Association, Kuskokwim Valley Native Association, Native Village of Eklutna, Fairbanks Native Association, Five Chiefs of Yakutat, Kenaitze Indian Association, and Native Village of Tyonek.[61] Generalized membership areas of regional groups are detailed in Figure 22.

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[60] U. S. Department of Interior, Alaska Field Committee, *Minutes*, June 1965 meeting, College, Alaska. The newspaper edited by Rock, the *Tundra Times*, addresses itself to the problems of Indians, Aleuts, and Eskimos. "It tells of their cultures and ways of life, but its most important mission is to publicize their problems..." *(Ibid.)*

[61] List of Native associations obtained during interview with Emil Notti, President, Alaska Federation of Natives, Anchorage, Alaska, May, 1968.

The Alaska Federation of Natives had its beginnings in October, 1966. While not named in its constitution as a specific objective of the Federation, the resolution of land claims is stated plainly as an aim in the preamble:

> We, the Native People of Alaska, in order to secure to ourselves and our descendants the rights and benefits to which we are entitled under the laws of the United States, and the state of Alaska; to enlighten the public toward a better understanding of the Native people; to preserve the Native cultural values; *to seek an equitable adjustment of Native affairs and Native claims;* to seek, to secure, and to preserve our rights under existing laws of the United States; to promote the common welfare of the Natives of Alaska and to foster the continued loyalty and allegiance of the Natives of Alaska to the flag of the United States and the state of Alaska, do establish this organization. . .[62] (emphasis supplied)

Objectives of the Federation named in its constitution and bylaws are: 1) "to promote pride on the part of the Natives of Alaska in their heritage and traditions; 2) to preserve the customs, folklore, and art of the Native races; 3) to promote the physical, economic and social well-being of the Natives of Alaska; 4) to discourage and overcome racial prejudice and the inequities which such prejudice creates; and 5) to promote good government, by reminding those who govern and those who are governed of their joint and mutual responsibilities."[63]

Membership in the Federation "shall consist of the following: All persons of Eskimo, Indian, or Aleut blood extraction, duly enrolled in the tribal rolls of any village or area-wide association of the state of Alaska, or until such tribal roll is established, enrolled provisionally on the temporary tribal rolls of the village or area-wide association. Standards for such temporary enrollment shall be determined by the village or area-wide association."[64]

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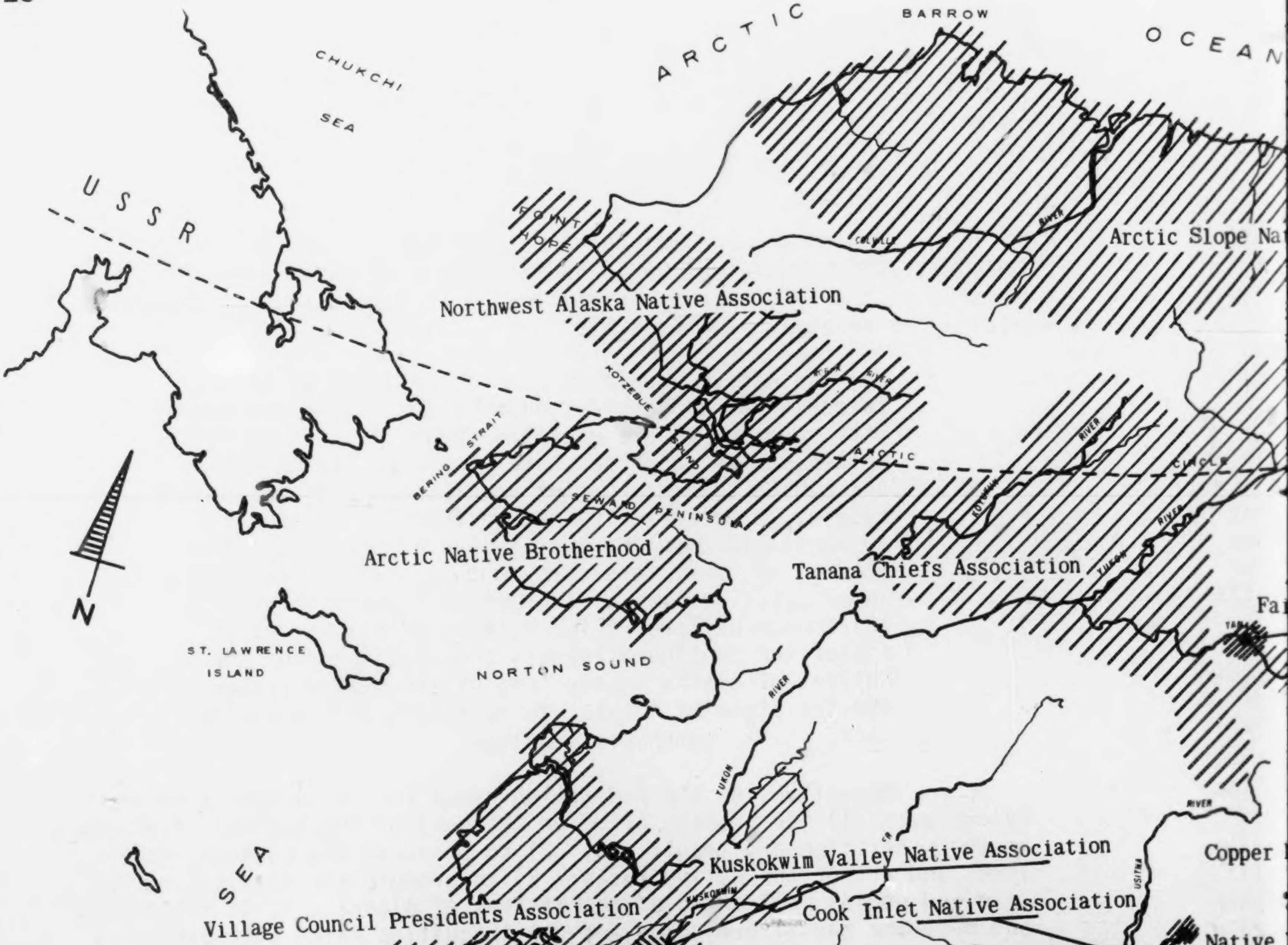
[62] Alaska Federation of Natives, *Official Constitution and Bylaws,* Preamble.

[63] *Ibid.,* Art. 1, Sec. 3.

[64] *Ibid.,* Art. 2, Sec. 1.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CHUKCHI SEA
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NOATAK RIVER
BERING STRAIT
ARCTIC CIRCLE
KOYUKUK RIVER
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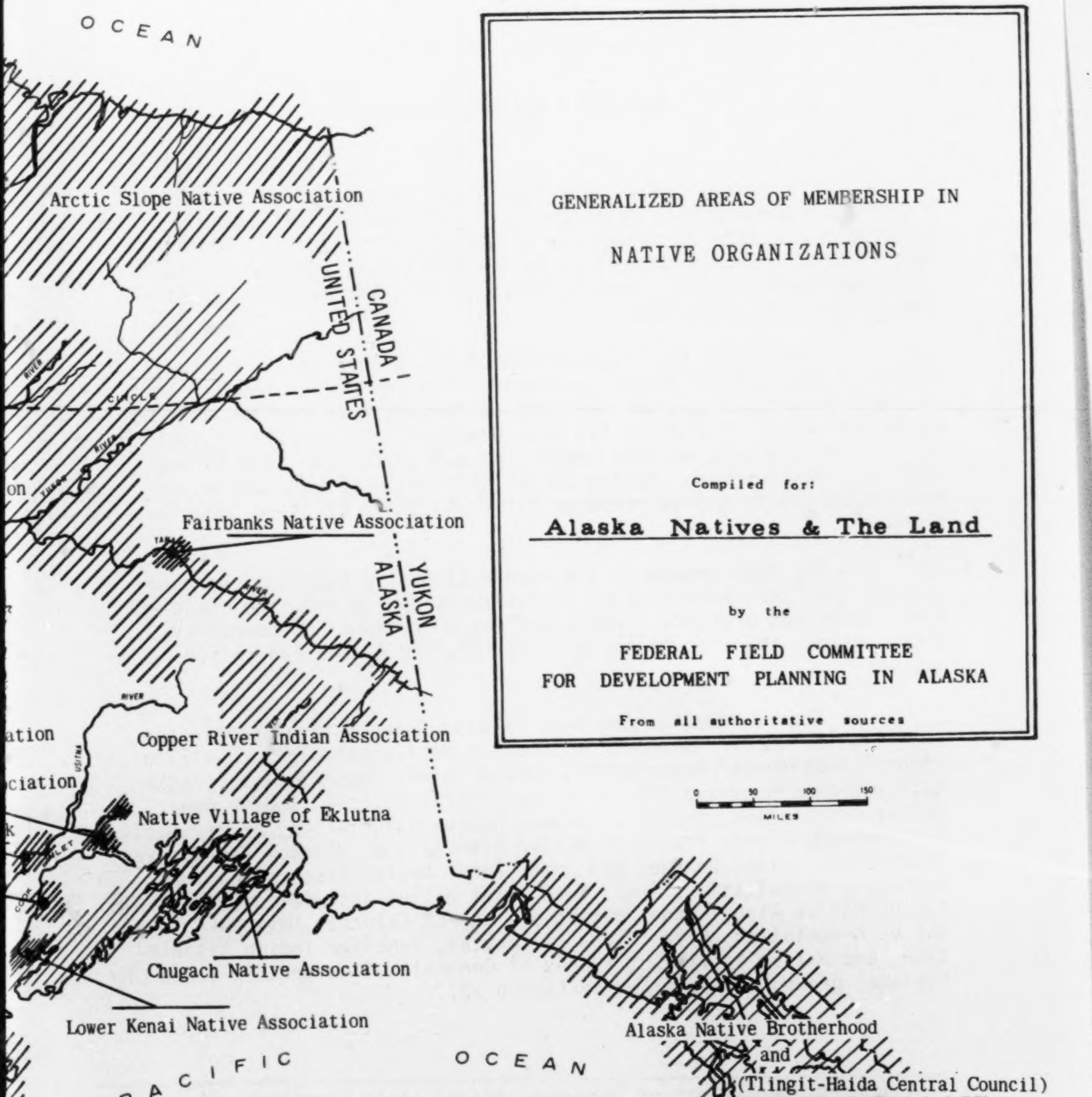
FIGURE 22



GENERALIZED AREAS OF MEMBERSHIP IN

NATIVE ORGANIZATIONS

Compiled for:

Alaska Natives & The Land

by the

FEDERAL FIELD COMMITTEE
FOR DEVELOPMENT PLANNING IN ALASKA

From all authoritative sources

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FIGURE 22

Representation in the Federation's annual meeting is based upon the number of enrolled active members in such area-wide association, or if the village is not in an association, the number of "enrolled active members" in the village. Each association and each village not in an association has one delegate and an additional delegate for each 100 active enrolled members beyond 50.[65]

At annual meetings held in October, delegates elect officers and directors and transact other business. The six officers (president, first and second vice presidents, secretary, treasurer, and sergeant at arms) are elected for two-year terms and serve as voting members of the Board of Directors. Other members of the board, also elected for two-year terms, are the elected single representatives of each area-wide association and three at-large members elected by villages not in associations.[66] The only salaried position specifically provided for in the constitution is the president, who is to receive not less than $12,000 per year. Other members of the board (including other officers) "will be reimbursed for out-of-pocket expenses incurred."[67]

Governing authority over the Federation between annual meetings is vested in the Board of Directors. This group "may hold quarterly meetings at such specific time and place as shall be determined by the president."[68] The president is compelled to call a meeting of the Board if a majority of its members request it in writing, but no such meeting has been requested.

Serving full time (since June of 1967) as president of the Federation is Emil Notti of Anchorage, who employs a full-time secretary. Office of the Federation is in Anchorage.

Financing of the Federation comes from membership dues, contracted performance of work for others, donations (from individuals, corporations, and Native associations), and raffles.[69] In May, 1968, the U. S. Department of Labor funded an on-the-job training contract with the Federation to provide basic and on-the-job training to 200 trainees. Amount of the contract was $282,792.[70]

In May, the Federation also obtained a loan of $100,000 from the Village of Tyonek to assist in pressing for satisfactory Congressional resolution of their land claims. The funds obtained will be used to hire a person or persons to prepare detailed presentations of the Federation's position respecting provisions of proposed legislation and to employ spokesmen who will travel to Washington as lobbyists for the Federation.[71]

The land issue "is the catalyst that has welded culturally diverse Native groups into a single federation" notes a leading Alaska newspaper, "and it appears likely that the Native organizations will outlive the land claims battle and extend their influence into other social and economic areas affecting the Alaska Native.[72]

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[65] Alaska Federation of Natives, *Official Constitution and Bylaws*, Preamble.

[66] *Ibid.*, Art. 3.

[67] *Ibid.*, Art. 5, Sec. 1 (a) (b).

[68] *Ibid.*, Art. 7, Sec. 2.

[69] Interview with Emil Notti, *op. cit.*

[70] Letter from Willard Wirtz, U. S. Secretary of Labor, to C. R. Smith, U. S. Secretary of Commerce, Washington, D. C., May 7, 1968.

[71] Interview with Emil Notti, *op. cit.*

[72] "The Emerging Village People," *Anchorage Daily News*, Dec. 17, 1967, and Dec. 18, 1967.

FEDERAL SPENDING AND ALASKA NATIVES

As aboriginal people of Alaska, Natives are eligible for a wide range of special federal services, just as Indians are in other states. They may, for instance, attend the Department of the Interior's Bureau of Indian Affairs day or boarding schools; and they may obtain tuition, transportation, and subsistence allowances from the Bureau for vocational training or college studies. They may receive assistance from the Bureau in finding jobs, borrowing money, devising economic development programs, acquiring surplus federal property, and in other ways. They may receive welfare payments from the Bureau when they are destitute, if they are not otherwise eligible under state welfare programs for the blind, disabled, old, or those having dependent children. From the Division of Indian Health of the U. S. Public Health Service, Department of Health, Education, and Welfare, they may obtain medical and dental care, and share in constructing water and waste disposal facilities. And through Interior's Bureau of Land Management they may obtain title to townsite lots or Indian allotments from the public domain.

Eligibility for programs, it should be noted, does not necessarily assure Natives that a service will be afforded. Attendance at boarding schools, for instance, is limited by facilities available. Participation in vocational training programs, owing to inadequate program funding, is open to only a fraction of those seeking training. Other Bureau programs are even more limited by low levels of funding. Extension of medical and dental care to Natives by the Division of Indian Health is affected not only by inadequate appropriations, but also by the difficulties of providing such services to the many remote villages. Water supply and waste disposal program funds fall far short of meeting needs. And such is also true of funds for surveys of townsites and other programs.

Federal spending for Alaska's Natives by the two agencies serving American Indians, the Bureau of Indian Affairs and the Division of Indian Health of the Public Health Service, will total about $43 million in fiscal 1968.[73]

Education of the young is the purpose to which nearly one-half of the federal budget for Alaska Natives is devoted, (See Figure 23). For operation of its day schools and a boarding school and for other educational arrangements for high school students, the Bureau of Indian Affairs will spend about $10 million; for construction of new schools and teachers' quarters and for repair and maintenance of existing facilities, the Bureau will spend another $10 million.

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Source

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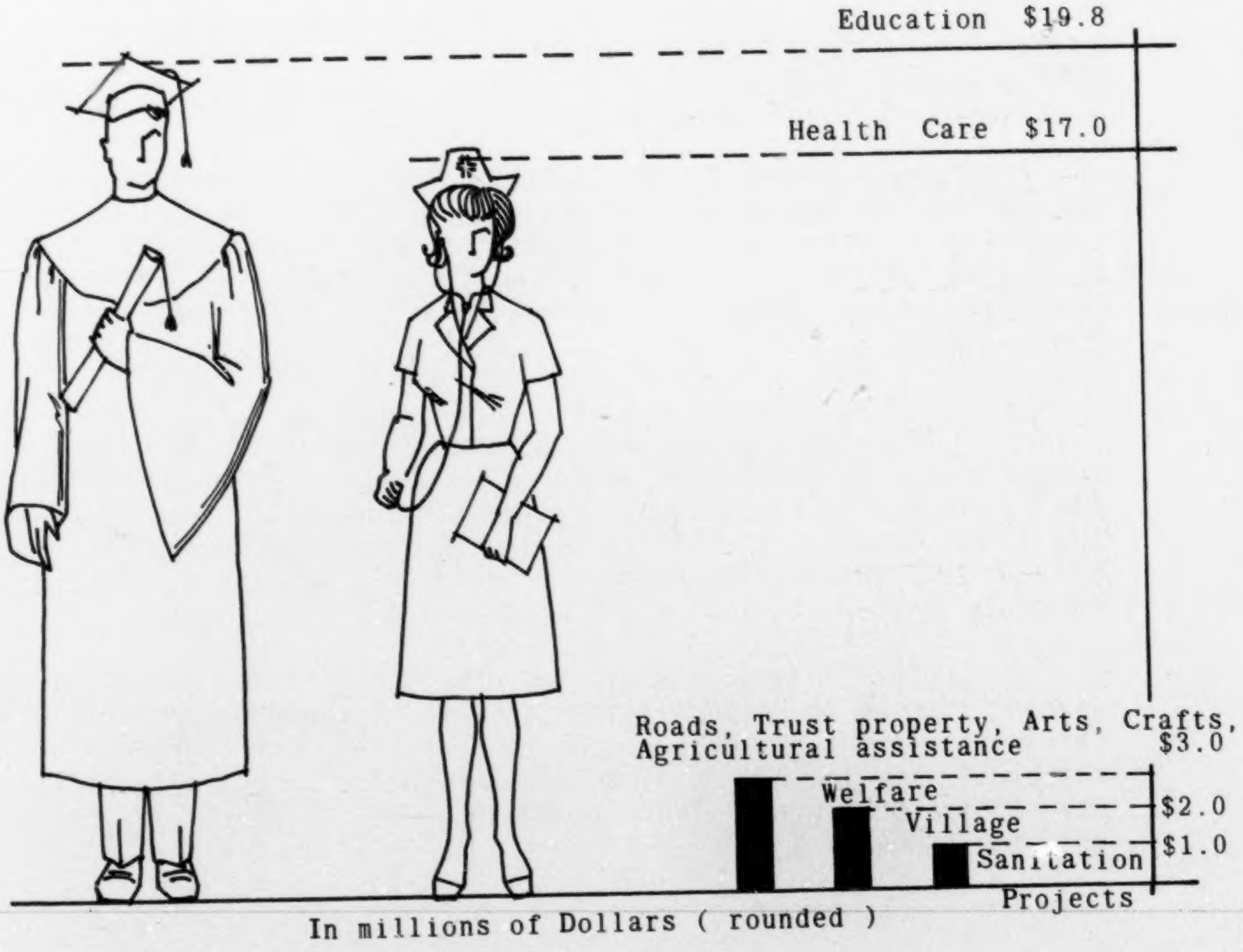
[73] *Senator Bob Bartlett's Washington Report*, by Mary Lee Council, Washington, D. C., Jan. 27, 1967.

Training for adults under the sponsorship of the Bureau, however, is slight by comparison. Its Adult Vocational Training Program, including relocation of persons to jobs, involves spending of about three quarters of a million dollars.

FIGURE 23

PRINCIPAL OBJECTS OF SPENDING BY
BUREAU OF INDIAN AFFAIRS AND
DIVISION OF INDIAN HEALTH, ALASKA
FISCAL YEAR 1968



In millions of Dollars (rounded)

Source: *Senator Bob Bartlett's Washington Report*, by Mary Lee Council, Washington, D. C., Jan. 27, 1967.

The second most important purpose to which federal spending for Alaska's Natives is devoted is health care. For operation of hospitals and clinics, and for otherwise extending medical services to the scattered Native population, the Division of Indian Health is spending about $16 1/2 million. The Division is also spending about one-half million dollars for alterations and repair of existing facilities.

Improvement of environmental health conditions through the construction of water systems or wells and waste disposal facilities in villages is being sought with about $1 million.

Of third--but much less--importance in terms of dollars spent for Alaska Natives is welfare. Almost $2 million will be spent directly by the Bureau of Indian Affairs for relief payments to needy Natives and for other welfare programs.

The remainder of the budget for the Bureau of Indian Affairs --almost $3 million altogether--is to be spent, in order of declining magnitude, for road construction and maintenance, agricultural and industrial assistance, administrative expenses, management of Indian trust property, development of Indian arts and crafts, and management of forests and range lands.

Headquarters for the Bureau in Alaska is in the state's capital in the southeastern panhandle, Juneau. Jurisdiction over schools (except for boarding schools) and other functions in Alaska is divided into five districts with offices (headed by superintendents) at Juneau, Bethel, Fairbanks, Nome, and Anchorage (See Figure 24).

The Alaska Native Health Area Office of the Division of Indian Health is located in Anchorage. Geographical subdivisions for Native health purposes are called service units. Named after the cities in which the Public Health Service hospitals of the region are located, the service units are Anchorage, Kanakanak, Bethel, Kotzebue, Barrow, Tanana, and Mt. Edgecumbe (See Figure 25).

Other federal spending of direct benefit to Alaska Natives goes to them as American citizens who are eligible under terms of categorical programs, not because they are Indians. For instance, those who are old, blind, disabled, or who have dependent children, may receive public assistance benefits -- mostly federally funded -- from the state.

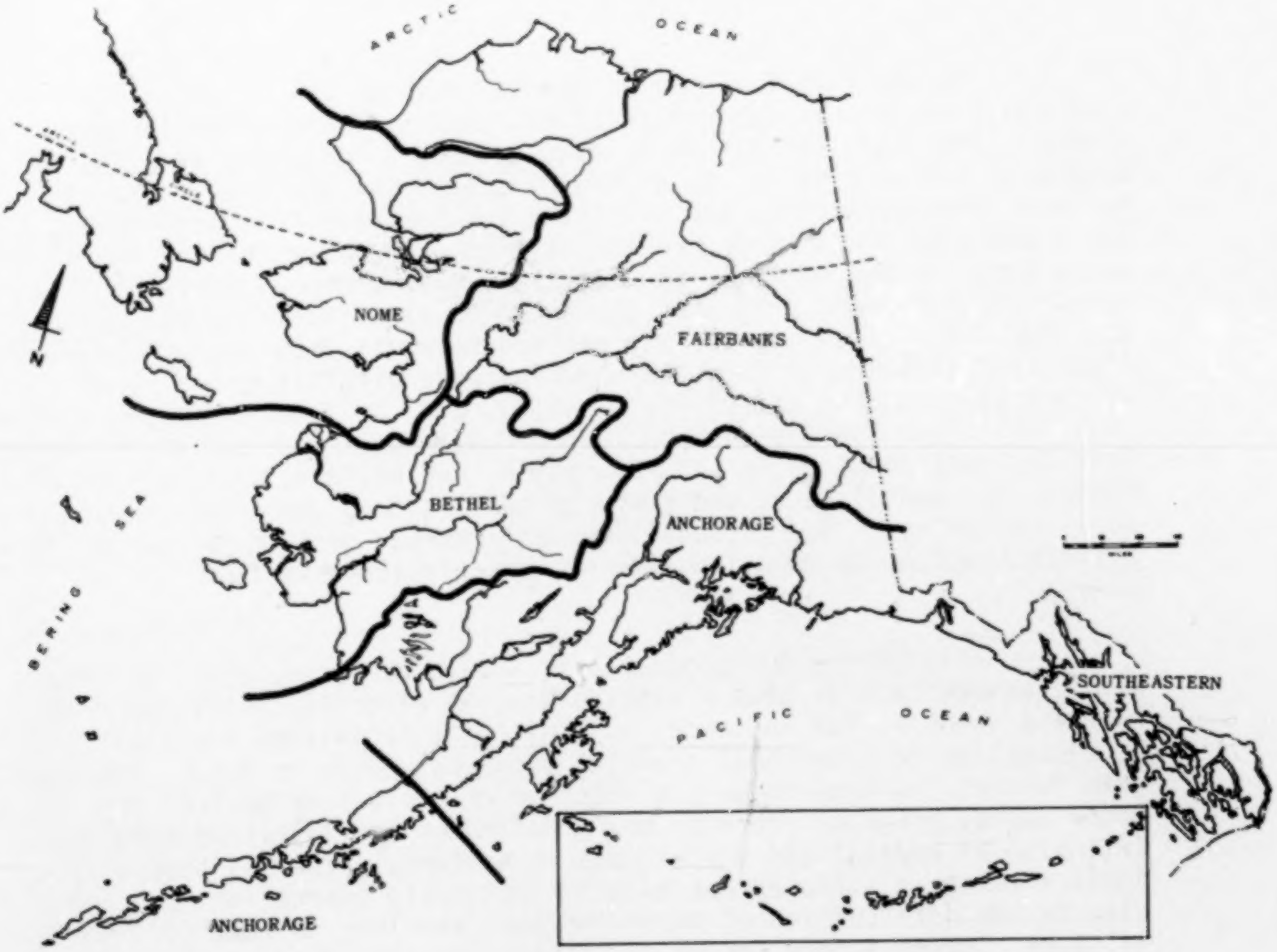

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FIGURE 24: Bureau of Indian Affairs Districts

Source: U. S. Bureau of Indian Affairs, Juneau Area Office, Juneau, Alaska.

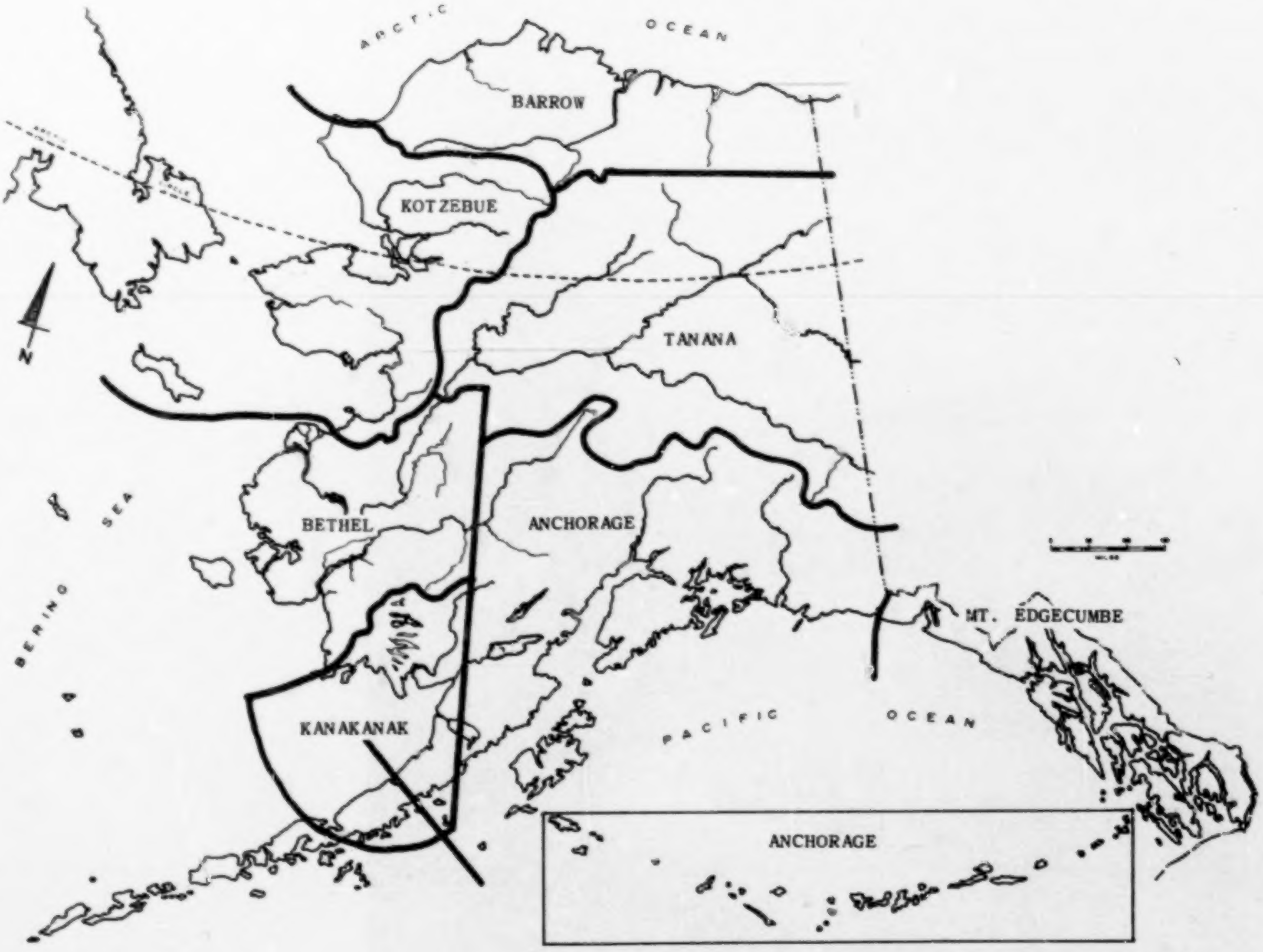
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FIGURE 25: Public Health Service Units

Source: U. S. Public Health Service, Alaska Native Health Area Office, Office of Program Planning and Evaluation, Anchorage, Alaska.

Those who live in remote areas who are unable to obtain decent and sanitary housing on terms they can afford may be able to participate in a grant-loan housing program authorized in 1966 by Congress. Those who are disadvantaged may participate in a number of antipoverty programs such as Headstart or Neighborhood Youth Corps. And there are others. In the programs cited--involving federal funds of about $8 million--the larger number of beneficiaries will be Alaska Natives.

While all Natives in the state are eligible for special federal programs conducted for American Indians, the benefits go chiefly to those who are residents of Native villages.

A CONCLUDING NOTE

Even though Eskimos, Indians, and Aleuts of Alaska have made social and economic gains, particularly in recent years, and for some of them the gains are substantial, social and economic problems confronting the larger number of Alaska Natives persist, and the dimensions of their problems are broad and complex.

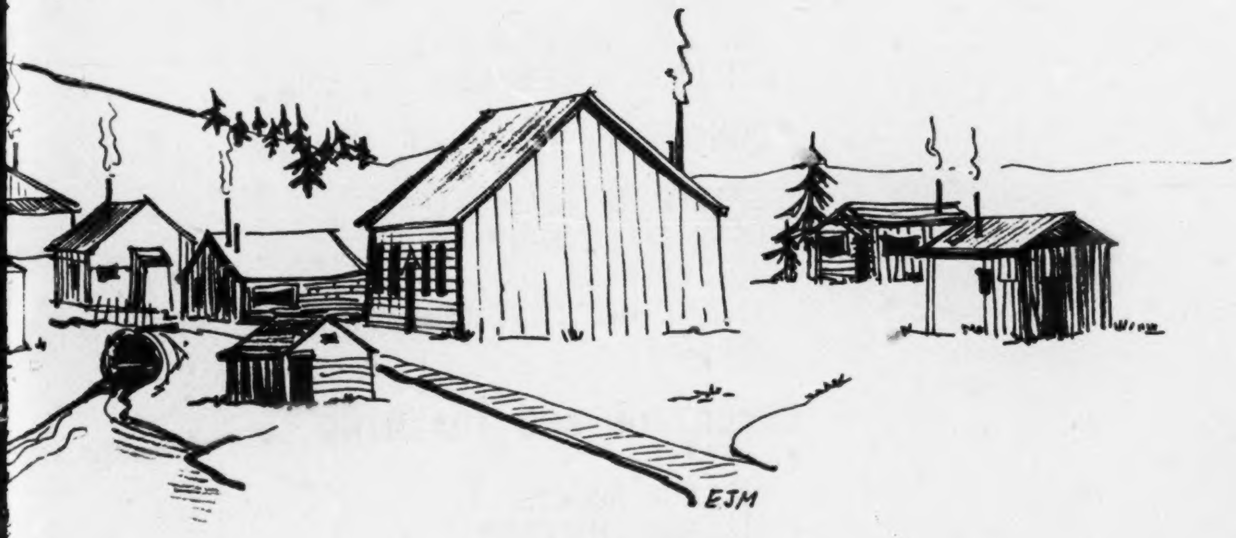
For some Alaska Natives who live in cities, social and economic problems are enormous, and for some who live in rural areas, such problems may be but few. But broadly told, while joblessness is high and income levels low among Natives generally, these conditions are worse for those in villages. While educational achievement is low among Natives generally, it is lower for those in villages. While the health status of Natives is poor across the state, it is poorer for those in villages. While opportunity for progress is limited for most Natives, it is virtually absent for those in villages.

Of most importance here: it is Alaska Native villagers who today--for their basic subsistence--range over, occupy, and use public domain lands. It is these villagers who have joined together with other Alaska Natives to lay claim to land and to protest against its transfer to others. And, in proposed settlements affecting land, it is they who are the principal focus: the Natives of village Alaska.

VILLAGE ALASKA

CHAPTER II

GE ALASKA



Robert D. Arnold

CHAPTER II

TABLE OF CONTENT

GENERAL CHARACTERISTICS . . . .

CHANGES IN VILLAGE SIZE . . . .
VILLAGE MOVES . . . .
REMOTENESS OF VILLAGES . . . .
LANGUAGE . . . .
ON THE PUBLIC DOMAIN . . . .
VILLAGE GOVERNMENT . . . .

ECONOMY OF VILLAGE ALASKA . . . .

GATHERING ACTIVITIES . . . .
WAGE EMPLOYMENT . . . .
JOBLESSNESS . . . .
INCOME AND COST OF LIVING . . . .
WELFARE . . . .

EDUCATION AND TRAINING . . . .

VILLAGE ADULTS . . . .
VILLAGE CHILDREN . . . .

HOUSING AND RELATED FACILITIES . . . .

HOUSING . . . .
WATER SUPPLY AND WASTE DISPOSAL . . . .

HEALTH STATUS . . . .

PRINCIPAL HEALTH PROBLEMS . . . .
ACCIDENTS, ALCOHOL, AND MENTAL HEALTH . . . . . .
DIET AND HEALTH . . . .
BEHIND THE HEALTH PROBLEMS: A SUMMARY VIEW . . . .

THE FUTURE OF VILLAGES AND GOVERNMENTAL POLIC

Grateful acknowledgment is made for the major contribution made by H. Prentiss
who prepared an original analysis of village economies upon which that section of this ch
this chapter; and to Wallace O. Craig, Superintendent, Fairbanks District, Bureau of Indi
and interior villages; also to Dr. Martha Wilson, Medical Director, Alaska Native Medical
Chief of Pediatrics, Alaska Native Medical Center, U. S. Public Health Service, who inter
Robert Iden, research assistant, Federal Field Committee for Development Planning in Alas
other officials of the Bureau of Indian Affairs and the Division of Indian Health; and to
Any conclusions or inferences in the text, however, are those of the staff of the Federal
ing agencies or individuals.

CHAPTER II

ABLE OF CONTENTS

CS 39

. . . . 41
. . . . 41
. . . . 42
. . . . 43
. . . . 45
. . . . 47

ASKA 50

. . . . 50
. . . . 54
. . . . 56
NG 57
. . . . 59

G 63

. . . . 63
. . . . 65

ACILITIES 71

. . . . 71
DISPOSAL 73

. . . . 77

MS 77
MENTAL HEALTH 79
. . . . 80
EMS: A SUMMARY VIEW 81

ES AND GOVERNMENTAL POLICY 83

tribution made by H. Prentiss Gazaway, Economist, Bureau of Indian Affairs, Juneau, Alaska, which that section of this chapter is based, and who carefully reviewed all sections of banks District, Bureau of Indian Affairs, who provided recent and unique data from northern irector, Alaska Native Medical Center, U. S. Public Health Service, and Dr. J. K. Fleshman, blic Health Service, who interpreted and gave significance to health data; also to Mrs. r Development Planning in Alaska, who prepared new materials relating to welfare; also to ision of Indian Health; and to other federal and state agencies for information they provided. se of the staff of the Federal Field Committee and do not necessarily reflect those of contribut-

VILLAGE ALASKA

GENERAL CHARACTERISTICS

Village Alaska--the 178 predominantly Native places[1] (of 25 persons or more) scattered across the state--is the home of about 37,400 Eskimos, Indians, and Aleuts, about 70 percent of the Native population residing in the state.[2]

Village Alaska stretches from the communities of Metlakatla and Hydaburg in the rain forests of the southeastern Panhandle--north and west 1300 miles to Barrow and Wainwright on the tundra along the Arctic Ocean and south and west nearly 1600 miles to Nikolski and Atka on the foggy, lushly vegetative islands of the Aleutian Chain. In a number of ways these places and 172 other Native places are unalike--in size, in climate, in landscape, in cultural heritage and its continuing influences, and in patterns of life and work--but in important ways they are alike.

Most importantly they are alike in that village people rely upon gathered resources of the lands and waters--not upon income from jobs--as a base for their subsistence. While not all villages or all village people depend to the same extent upon hunting, fishing, trapping and other activities of gathering for food, reliance on gathering activities is generally characteristic of village Alaska.

Size of Native Communities

Most villages are small. Fifty places have 25 to 99 inhabitants; another 64 have more than 100 but fewer than 200 inhabitants; and another 26 places have more than 200 but fewer than 300 inhabitants. Taken together these 140 villages have a population of only 17,400 persons.[3]

Even smaller are an additional 50 Native places where one or more Native families are reported to live most of the year, but whose population is believed to be fewer than 25. Total Native population of these tiny settlements may total 200 or 300 persons.[4]

About 12,000 Natives live in 32 communities ranging in size from 300 to 1,000 persons; most of these places are smaller than 500.

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ILLAGE ALASKA

GENERAL CHARACTERISTICS

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There are no urban communities that are predominantly Native, but there are six predominantly Native places that have a population of more than 1,000 persons (See Figure II-1). In these cities--Metlakatla, Dillingham, Bethel, Kotzebue, Barrow, and Nome--live nearly 8,000 Natives.

Almost half of village Alaska's non-Native civilian population of about 4,500 live in these larger settlements. These people are chiefly employees of federal and state government, but there also are shopkeepers and other businessmen, fishermen, prospectors, and their families. In the smaller places, non-Natives are chiefly employed by government as teachers or VISTA volunteers, or they are commercial traders or store operators, or they are clergymen or missionaries.

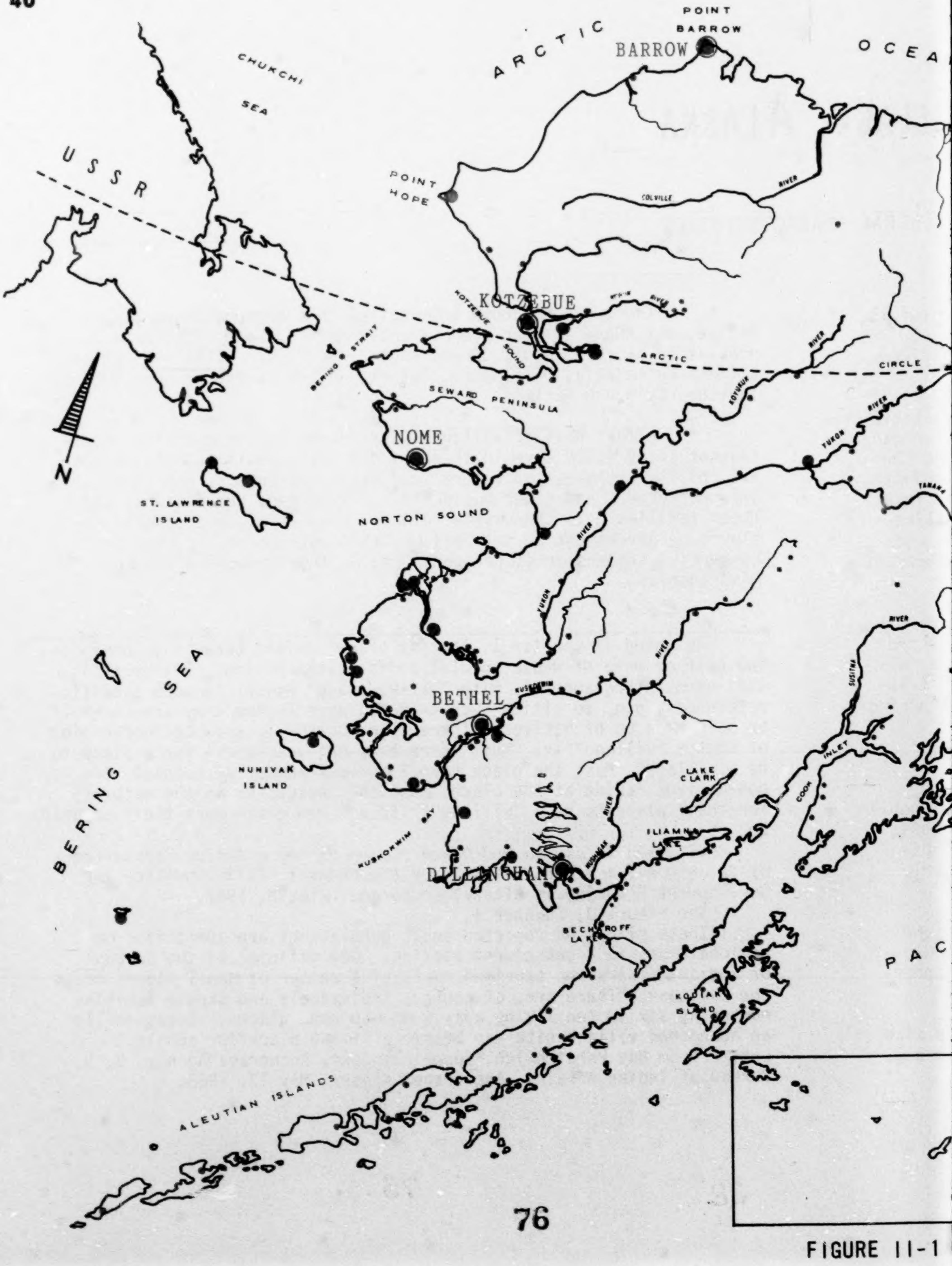
---

[1] As noted in Chapter I, "Native place" refers here to a community, one-half or more of whose population is Alaska Native. "Village" is used here interchangeably with "Native place" except in some specific references, e.g. to cities such as Nome, even though they are one-half or more made up of Natives. There is no uniformly accepted definition of what a "village" is. Must there be a Native council for a place to be a village? Must the place have a minimum number of people? If non-Natives reside at the place, must the Natives be in the majority for their place to be a "village"? If so, how great must their majority be?

[2] *Villages in Alaska and Other Places Having a Native Population of 25 or More,* a Report prepared by the Federal Field Committee for Development Planning in Alaska, Anchorage, Alaska, 1967.

[3] See Figure 3, Chapter I.

[4] These places of reported small populations are identified on regional maps in a subsequent section. One official of the Bureau of Indian Affairs who provided names of a number of small places added the reminder: "There are, of course, individuals and single families numbering six to ten living away from map name places. Occasionally an abandoned village site may become a living place for awhile." Letter from Roy Peratrovich, Superintendent, Anchorage Agency, U. S. Bureau of Indian Affairs, Anchorage, Alaska, May 13, 1968.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OCEA
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POINT HOPE
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KOTZEBUE
KOTZEBUE SOUND
RIVER
ARCTIC CIRCLE
BERING STRAIT
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NOME
ST. LAWRENCE ISLAND
NORTON SOUND
KOYUKUK RIVER
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NUNIVAK ISLAND
BERING SEA
KUSKOKWIM BAY
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ILIAMNA LAKE
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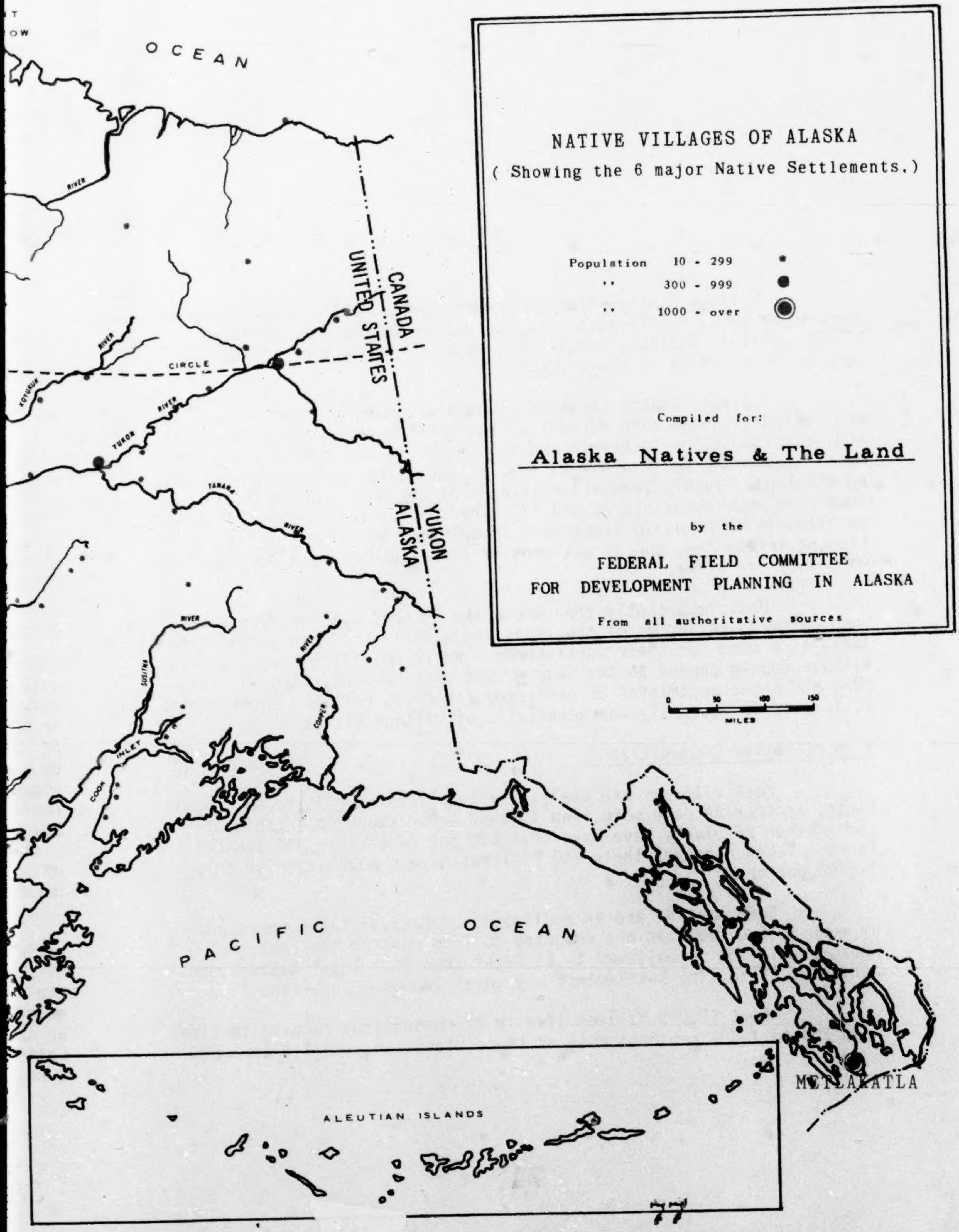
ALEUTIAN ISLANDS

FIGURE II-1


NATIVE VILLAGES OF ALASKA
(Showing the 6 major Native Settlements.)
Population 10 - 299 •
" 300 - 999 ●
" 1000 - over ◉
Compiled for:
Alaska Natives & The Land
by the
FEDERAL FIELD COMMITTEE
FOR DEVELOPMENT PLANNING IN ALASKA
From all authoritative sources
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OCEAN
RIVER
KOYUKUK
CIRCLE
YUKON RIVER
TANANA RIVER
CANADA
UNITED STATES
YUKON
ALASKA
SUSITNA RIVER
COOK INLET
COPPER RIVER
PACIFIC OCEAN
METLAKATLA
ALEUTIAN ISLANDS

FIGURE II-1

Changes in Village Size

Only small villages have been abandoned in recent years (See Figure II-2). Thirty-one villages of fewer than 100 persons and six places of 100 to 199 persons in 1950 are now abandoned or have declined to one or two families.[5] All other 153 Native communities continue to exist and only 26 of them are smaller today than they were in 1950.[6] Another 46 of them, however, have apparently experienced out-migration; their rate of growth over the 17-year period has been less than the approximate rate of natural increase.[7] Changes in aggregate population are shown in Figure II-3.

The median size of communities, half or more of whose population is Native (considered by total population), has grown from 100 in 1950 to 155 in 1967. As may be seen in Figure II-4, about half of the people in Native places in 1950 lived in villages whose population was fewer than 200. Today less than one-third live in villages that small. And only one-fifteenth of the people in Native places lived in cities or towns of 1,000 or more in 1950. Today, nearly one-fourth do.

During this same period--in which 37 places declined to one or two families or were abandoned completely as permanent sites--new settlements were being established or were growing from seasonal camps to year-round villages. Census reports show 25 additions, but--owing to an apparent oversight in 1950 of four places--only 21 appear to be new villages.[8]

Village Moves

In western Alaska more than in other regions, village sites may be impermanent. Thirty of the 37 places that declined to a family or two or were abandoned between 1950 and 1967 were in the West.[9] Excluded from these counts are relocations of entire villages to new sites--such as the move in 1964 of the people of Holikachuk to Grayling. Establishment of altogether new settlements is also more likely to occur in the West; 85 percent of the 1967 villages not existing in 1950 are in the West.[10]

Of 24 places contemplating moving to new sites listed in 1966 for the Congress by the Bureau of Indian Affairs,[11] 19 are in western Alaska. The Eskimos of the village of Kwigillingok, one of the places named, are now in the process of moving to a site called Kongigonak to escape late spring floodings, a move expected to be completed by the fall of 1968. The Indians of the interior village of Minto (not one of those named in the 1966 list) are actively seeking a new location for a move that would take place in 1968.

Generally in recent years migration from one site to another has been caused by flooding or other natural disaster, increased pressures on scarce resources, or has resulted from a community's recognition of attractions--timber, fish, or game, a school or hospital--at another location. A community's preference for subsistence reasons for a different site will not necessarily result in relocation to it, for such attractions would have to be weighed against physical facilities --such as a school at their present location--facilities that probably would not soon be established at the new site.

Permanence of a village site is characteristic of southeastern Alaska. In this region no Native place has been abandoned in recent years and none of the villages is reported to be contemplating moving to a new location.

---

[5] Places of 25 or more in 1950 that are now abandoned as permanent sites or that have only a few families are: New Hamilton, Ohagamiut, Ikatan, Tuklung, Hyder, Port Moller, Niliklugik, Council, Takotna, Napaimute, Nunachuk, Paingakmeut, Indian, Squaw Harbor, Koyukuk River, Kasan, Pile Bay, Ugashik, Nash Harbor, Tikikluk, Chiftak, Cheeching, Chukfaktoolik, Igloo, Emangak, Kokrines, Point Lay, Chenega, Solomon, Chowtockolik, Umkanute, Chaneliak, Unga, Nanvarnaluk, New Knock Hock, Afognak, and Akulurak.

[6] Villages that are smaller today than they were in 1950 are: Diomede, Candle, Buckland, Belkofsky, Clark's point, White Mountain, Ekwok, Tanacross, Wales, Karluk, Elim, Saxman, Deering, St. George, Northway, Chignik, Noatak, Hydaburg, Craig, Klawock, Angoon, Lime Village, Hamilton, Eklutna, Pitkas Point, and Rampart.

[7] The approximate rate of natural increase on a statewide basis was considered to be 50 per cent over the 17-year period. Places growing by a smaller percentage are: Medfra, English Bay, Levelock, Akutan, Klukwan, Anvik, Nikolski, Pauloff Harbor, Tetlin, Stevens Village, Atka, Port Graham, False Pass, Gulkana, Pilot Point, Platinum, Circle, Nikolai, Golovin, Beaver, Chefornak, Sleetmute, Kalskag, Ouzinkie, Egegik, Ruby, Eek, Aleknagik, St. Michael, Akiak, McGrath, Brevig Mission, Koyuk, Shungnak, Minto, Shishmaref, Point Hope Kwigillingok, Wainwright, Gambell, St. Paul, Kake, Unalakleet, Fort Yukon, Metlakatla, and Nome.

[8] See Footnote 9, Chapter I.

[9] See Footnote 5 above.

[10] See Footnote 9, Chapter I.

[11] Mamie E. Mizen, *op. cit.*, p. 630.

Remoteness of Villages

Alaska may well have more settlements not on any road system than the rest of the states combined, for fewer than a dozen Native villages are on the state's limited road network. Two are on the route of the 540-mile Alaska Railroad. Access to the other 170 or so is only by air, or seasonally, by boat or snowmobile or dog team.[12]

In fall and spring, not all villages are accessible even by air. At the 45 villages without airstrips (outside of southeastern Alaska) several weeks of fall freeze-up prevent float planes from landing in the rivers, and the several weeks of spring breakup prevent ski-equipped planes from landing on winter's ice. At least two villages, Atka on the Aleutian Chain and St. George in the Pribilof Islands, may never be visited except by boat. Airstrips in villages, where they exist, are usually gravel.[13]

FIGURE II-2

GROWTH AND DECLINE OF NATIVE PLACES IN ALASKA, BY SIZE OF TOTAL POPULATION, 1950-1967

Total Population in 1950	Growth of 50% or more, 1950-67	Growth of 49% or less, 1950-67	Smaller Today than in 1950	Abandoned or few Families
25-99	34	19	5	31
100-199	33	17	15	6
200-299	8	3	1	--
300-399	1	3	3	--
400-499	--	2	2	--
500-599	2	--	--	--
600-699	2	--	--	--
700-799	--	--	--	--
800-899	--	1	--	--
900-999	1	--	--	--
1000 or more	--	1	--	--

NOTE: The populations of five additional Native places in 1950 are now counted with adjacent places; three other Native places in 1950 now are predominantly Non-Native.

Source: U. S. Bureau of Census, *U.S. Census of Population: 1950, Number of Inhabitants, Alaska.* Final Report PC(1)-3A. U.S. Government Printing Office, Washington, D. C., 1950; *Villages in Alaska and Other Places Having a Native Population of 25 or More,* a Report prepared by the Federal Field Committee for Development Planning in Alaska, Anchorage, Alaska, 1967.

In western Alaska, where most villages are located, surface carried freight on ocean going vessels arrives but twice annually at most.

FIGURE II-3

NUMBER AND TOTAL POPULATION OF PREDOMINANTLY NATIVE PLACES BY SIZE OF PLACE, 1950 and 1967

Size of Place	1950		1967		Increase or Decrease	
	No. of Places	Population	No. of Places	Population	No. of Places	Population
25-99	96	5,734	50	3,139	-46	-2,595
100-199	71	9,884	64	9,372	- 7	- 512
200-299	13	3,220	26	6,253	+26	+3,033
300-399	7	2,404	15	5,046	+ 8	+2,642
400-499	4	1,748	12	5,026	+ 8	+3,278
500-599	2	1,140	2	1,054	Same	- 86
600-699	2	1,274	2	1,272	Same	- 2
700-799	0	--	0	--	--	--
800-899	1	817	1	850	Same	+ 33
900-999	1	951	0	--	- 1	- 951
1,000 or more	1	1,876	6	9,951	+ 5	+8,075
TOTALS	198	29,048	178	41,963	-20*	+12,915

*Eight of these places are now either predominantly non-Native or are counted with contiguous places.

Source: U. S. Bureau of Census, *U. S. Census of Population: 1950, Number of Inhabitants, Alaska.* Final Report PC(1)-3A. U. S. Government Printing Office, Washington, D. C., 1950. *Villages in Alaska and Other Places Having a Native Population of 25 or More,* a Report prepared by the Federal Field Committee for Development Planning in Alaska, Anchorage, Alaska, 1967.

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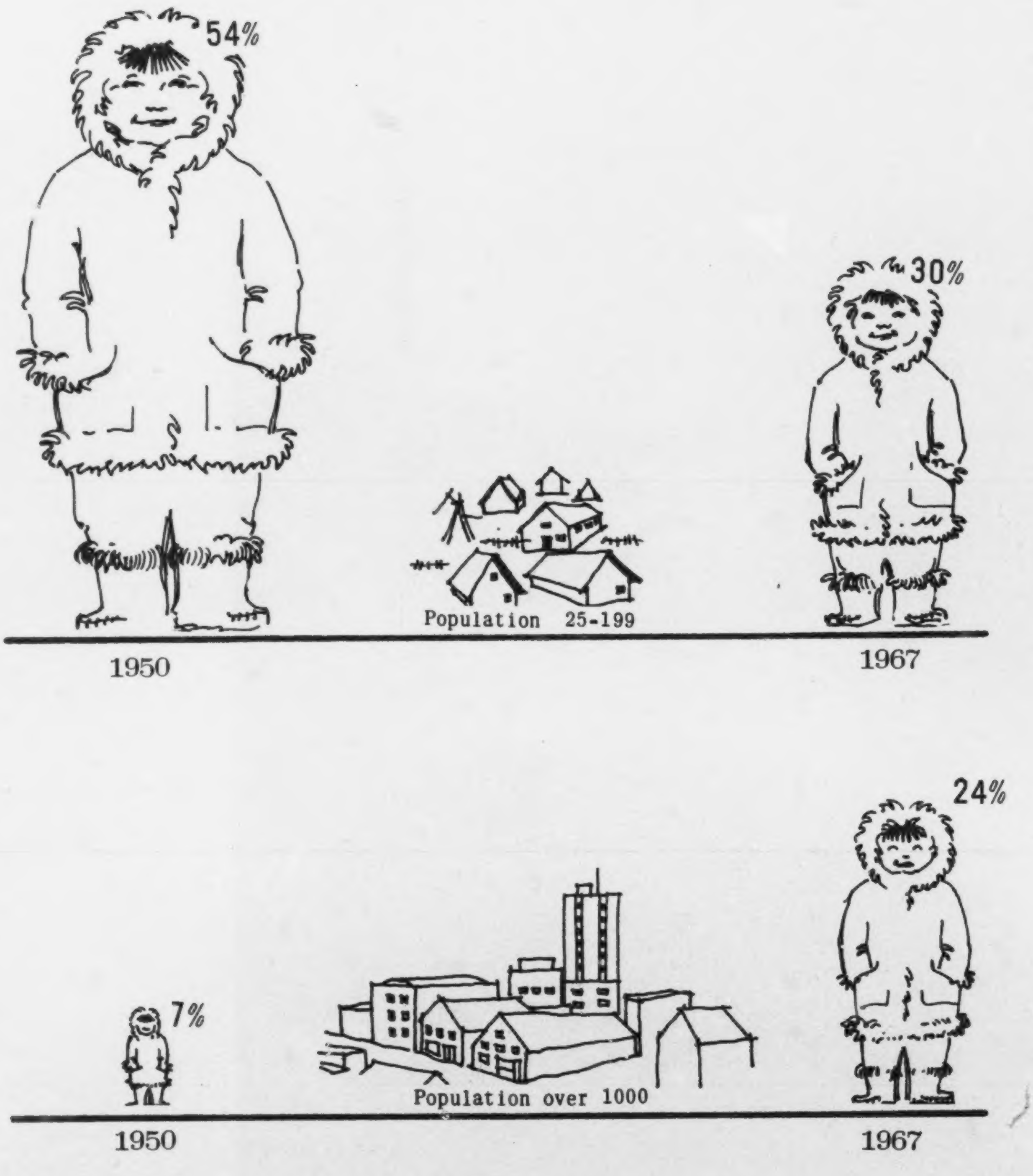
[12] For a fuller discussion of transportation problems and villages, see the recent publication of the Federal Field Committee for Development Planning in Alaska, *Transportation and Economic Development in Alaska,* Anchorage, Alaska, 1968, pp. 83-93.

[13] Compiled by Federal Field Committee for Development Planning in Alaska from Airport Facilities Record Forms, U. S. Department of Transportation, Federal Aviation Administration, Anchorage, Alaska, 1967.

FIGURE II-4

PERCENTAGE DISTRIBUTION OF POPULATION BY SIZE OF PLACE IN PREDOMINANTLY NATIVE PLACES, 1950 & 1967



Source: Figure II-3.

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Communication with most villages is by letter or radio, for only 23 Native places have telephone service linking them to other places.[14] Not all of the villages have radio transmitters and receivers, and even if they do, communication may be made uncertain by climatic conditions. And since most of the transmitters and receivers are in state or federal schools, their use is limited to official business and emergencies.

Commercial radio broadcasts are widely listened to in villages for most households have radios, battery powered in most places. With one exception--a recently installed videotape cable system in Barrow--television is nonexistent in northern and western villages. Only five Native communities are able to receive telecasts from neighboring cities.

Language

Characteristic of village Alaska is the widespread use of Native languages, and, except for conversation with government people or other whites, avoidance of English. In southeastern Alaska, where Tlingit, Haida, and Tsimshian contact with whites has been longest and most continuous, this is far less true than in western Alaska where Eskimo contacts with whites have been fewer and of shorter duration. In the southwestern village of Nunapitchuk, for instance, all children learn the Yuk dialect of Eskimo at home and use it when talking with other Eskimos. At school they learn and use English. "When talking with white people those who speak English will use it, but they avoid it in talking with one another, particularly if older persons are nearby. They don't want to be shamed 'for acting like a gussuk' (a white man)" reports a young leader from the village.[15]

Because of the limited ability of some villagers, particularly older Eskimos, in northern and western Alaska, to speak English, interpreters are needed by English-speaking visitors in many villages. About three of four adults, however, in 35 northern interior and coastal villages, are reported (on the basis of a recent survey) to speak and understand English well.[16]

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[14] Another 70 places can be reached by radio telephone link-ups. Alaska Communication System Tariff No. 99, 1967, Revised 1968.

[15] Interview with Robert Nick, Nunapitchuk, Alaska, May 12, 1968.

[16] U. S. Department of Interior, Bureau of Indian Affairs, *Preliminary Findings, Demographic Study Conducted in Fairbanks Agency Area,* Fairbanks, Alaska, 1968, p. 6.

Village of Kipnuk, *Photo by Anchorage Daily News*

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On the Public Domain

Another characteristic of village Alaska is that most of its people live not on land they own, but on the public domain. Two-thirds of Alaska's 7,500 village families own no land at all.

Village Alaskans own in fee less than 500 acres of 375 million acres of their Native land. These parcels of land are held by about 1,400 families who have received or petitioned for unrestricted title to their townsite lots.[17]

Under restricted title, somewhat more than 15,000 acres are held by 961 households. Most of this acreage is in 175 allotments--obtained by Natives in the 62 years since the Indian Allotment Act was enacted;[18] the remainder is in 786 townsite lots in 32 villages.[19]

Very little acreage--in townsite lots or allotments--is in northern and western Alaska, where most Alaska Natives live (See Figures VI-12 and VI-13).

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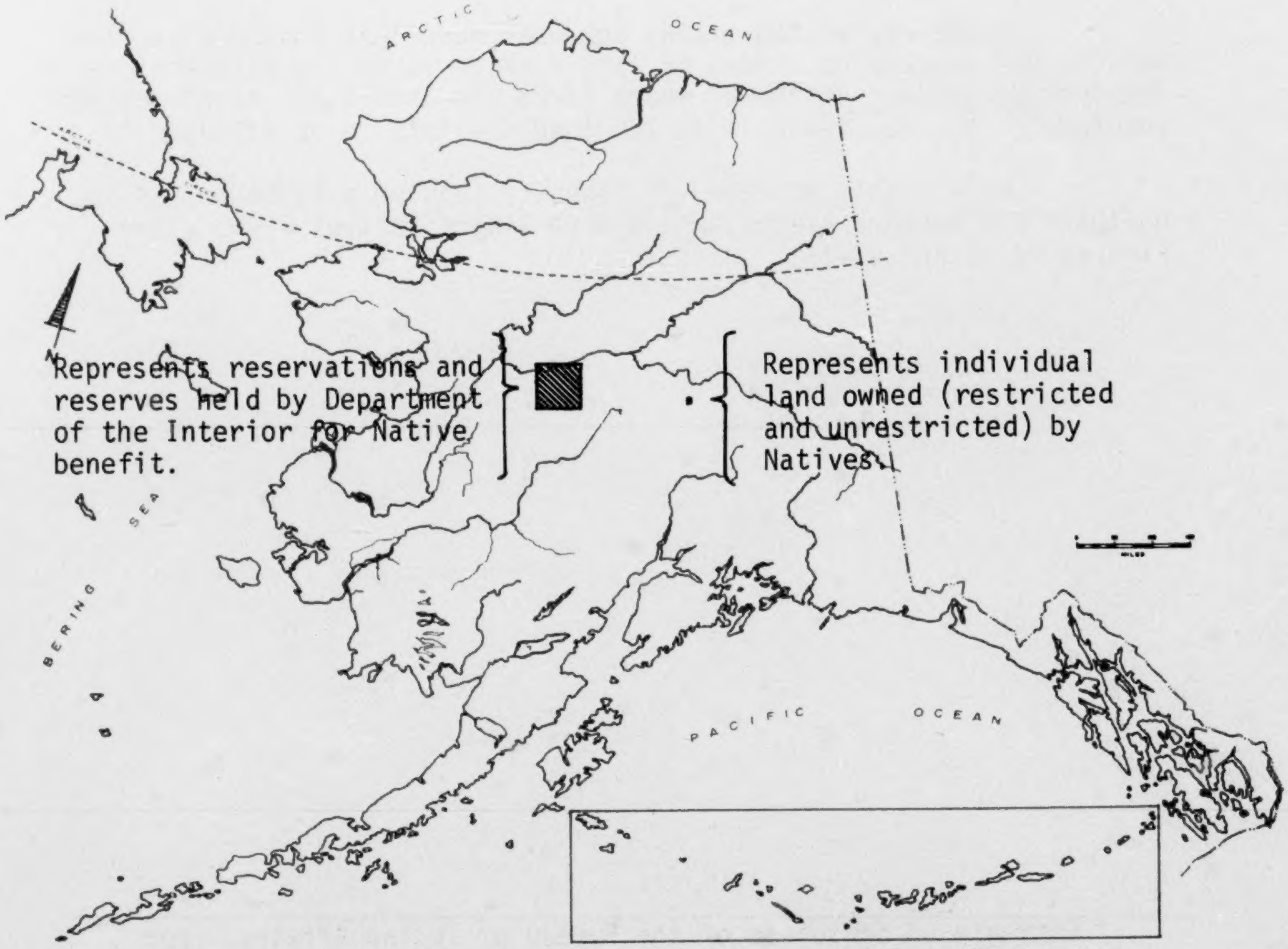
[17] Estimate of officials of the Bureau of Indian Affairs. For example, fifteen owners had restricted deeds converted to unrestricted deeds on 8.14 acres of townsite lots during fiscal year 1967, computed from *Annual Report of Caseloads, Acreages under BIA and Surface Leasing, June 30, 1967*, Bureau of Indian Affairs, Juneau Area Office, Juneau, Alaska.

[18] Act of May 17, 1906, (34 Stat. 197). The Act provides that such allotments of *nonmineral* land shall be *inalienable* and *nontaxable* until otherwise provided by Congress.

[19] U. S. Department of the Interior, Bureau of Indian Affairs, *Annual Reports 1966 and 1967*, Juneau Area Office, Juneau, Alaska. The *Reports* record 175 allotments and 786 restricted townsite lots for a total of 14,827 acres as of June 30, 1967.

FIGURE II-5

PORTRAYAL OF ACREAGE OWNED BY NATIVES
OR HELD BY THE DEPARTMENT OF THE INTERIOR
FOR THEIR BENEFIT, JUNE 30, 1967


ARCTIC OCEAN
Represents reservations and reserves held by Department of the Interior for Native benefit.
▨
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Represents individual land owned (restricted and unrestricted) by Natives.
BERING SEA
PACIFIC OCEAN

Source: Records of Realty Office, U. S. Department of the Interior, Bureau of Indian Affairs, Juneau Area, Juneau, Alaska, May, 1968.

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About 900 families of the landless two-thirds share the use of--but not the ownership of--slightly more than 4 million acres on 23 reserves, withdrawals or reservations.[20] Certainty of tenure on these lands ranges from the security of the Congressionally-established Annette Island Reservation[21] to the insecurity of the Executive Order Reserve[22] of the village of Eklutna, now shrunken by successive land orders from 328,000 acres to 1,819 acres. The smallest of all Native reserves is 75 acres near Fort Yukon, inhabited today by two families; the largest, the Venetie Reserve of 1,408,000 acres shared by two villages and some 215 Native people.[23]

Another 2.6 million acres of mountain tops and glaciers in southeastern Alaska is held in "Indian title" by the Tlingit-Haida Indians, as recognized by the U. S. Court of Claims.[24]

If all lands to which even a color of title exists are added together, the total reaches only 6,615,500 acres. And the title, and management of all of this--except for 500 acres--is held by the federal government (See Figure II-5).

Without title and without tenure, the vast majority of the rural people live on, range over, and use the public domain as they have for generations.

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[20] Includes 1,253,000 acres in Reindeer Reserves. See Figures VI-3 , VI-4,VI-5,VI-6, in Chapter IV following.

[21] Act of March 3, 1891. (26 Stat. 1101).

[22] Executive Order No. 4778, December 5, 1927, as modified by Executive Order No. 6734 of June 8, 1938, Departmental Order October 30, 1936, and Departmental Order of December 18, 1942, partially revoked by Public Land Order 2427, July 5, 1961. Lands were reduced from 9,221.17 acres to the present acreage of 1,819 acres.

[23] See Footnote 19 above.

[24] *The Tlingit and Haida Indians of Alaska and Harry Douglas, et al Intervenors v. United States,* (Ct. Cl. 47900, January 19, 1968).

Village Government

Most villages in Alaska are organized for government only on a traditional basis. Others are chartered under the Indian Reorganization Act, some are organized as cities under the laws of the State of Alaska, and a few have dual organization[25] (See Figure II-6).

The 84 villages organized only on a traditional basis choose village councils and leaders in varying patterns, sometimes following customs of the past, but most of the time following newer practices of open elections. These villages have no formal legal status.[26] Another 14 places are not identified in recent materials as having even a traditional form of government, but village councils of some form exist in most of them. Whites and other non-Natives are sometimes members of village councils.

The 59 villages chartered under the Indian Reorganization Act and the Alaska Act have constitutions, bylaws, and charters under which they may provide municipal services and engage in business. Charters under the Indian Reorganization Act were granted to "groups comprising all Native persons in a community" and groups "though not a community but comprising persons having a common bond of occupation or association, or of residence within a definite neighborhood."[27] Twenty-one of these villages are also incorporated as first, second, or fourth class cities.

According to the Bureau of Indian Affairs, IRA charters granted to groups in southeastern Alaska participating in commercial fishing were broader than those granted in western Alaska where the interest was one of establishing village commodity and merchandise stores. Broadest scope of authority was granted to the only Congressionally-established reservation in the state, Metlakatla (Annette Islands Reserve).

Twenty-four of the 41 villages incorporated under state law are fourth class cities. These cities have limited powers (e.g., the only tax they may levy is a sales tax) and limited responsibilities (e.g., they are not responsible for the operation or maintenance of schools). Native people at eleven of these places are also chartered under the Indian Reorganization Act.

Of the eight predominantly Native places incorporated as first class cities, six are also chartered under the Indian Reorganization Act. Of the nine Native places incorporated as second class cities, Natives at three are also chartered under the Indian Reorganization Act. Except for those places within boroughs, these villages may levy property taxes and operate their own schools.

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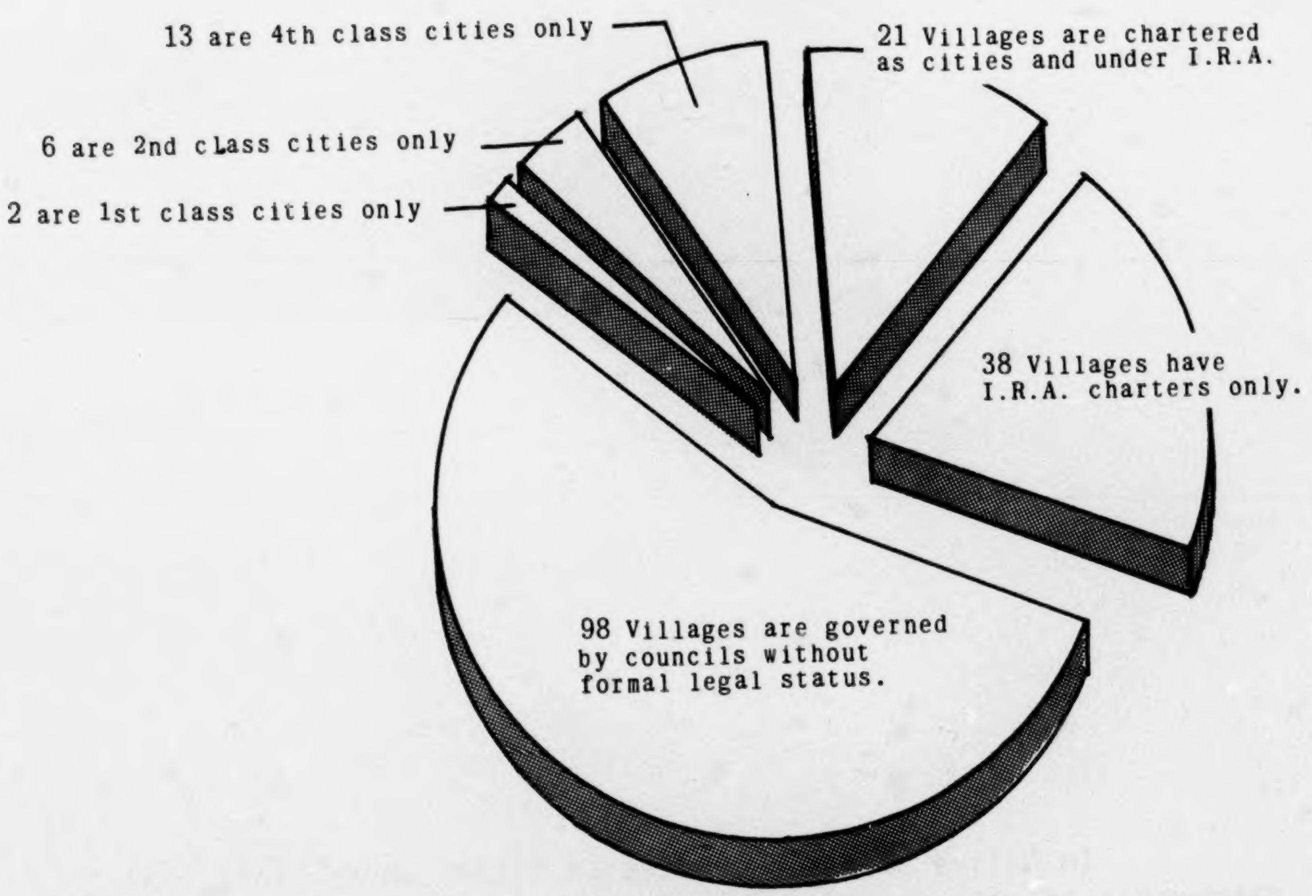
FIGURE II-6

VARIETIES OF GOVERNMENTAL ORGANIZATION IN PREDOMINANTLY NATIVE PLACES
1967



Source: *Villages in Alaska and Other Places Having a Native Population of 25 or More,* a Report prepared by the Federal Field Committee for Development Planning in Alaska, Anchorage, Alaska, 1967.

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[25] Mizen, *op. cit.*, p.

[26] Interview with Roy Peratrovich, Superintendent, U. S. Bureau of Indian Affairs, Anchorage District, Anchorage, Alaska, May 23, 1968.

[27] Mizen, *op. cit.*, p. 78.

Toksook Bay, *Photo by Anchorag*

In Native places organized as cities under state law, membership on city councils is, of course, open to all adults in the community and is not restricted to Native persons. Though in a minority position in the community, whites are sometimes in the majority on city councils in larger Native towns.

Of the 178 Native communities, only 29 have budgets for city administration or schools based upon sales or property taxes which they collect.[28]

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Bay, *Photo by Anchorage Daily News*

State laws, of course, apply in all villages, but no other area-wide government exists for most villages; for them there is no regional government corresponding to counties in other states of the nation (nor any regional Eskimo, Indian, or Aleut organizations having tribal governmental powers). While state law provides for the formation of area governments--boroughs--and nine boroughs now exist, those formed serve principally the non-Native population centers of the state. Within these boroughs are located only 13 villages. All other Native places outside the nine boroughs are said to be part of the "unorganized borough" for which the state legislature may sit as a borough assembly; the legislature, however, has never acted as an assembly for the unorganized borough.

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[28] Alaska Local Affairs Agency, "Borough and City Property Tax and Sales Tax Rates, 1965-1967", Vol. VII, No. 4 of *Alaska Local Government,* May, 1968.

ECONOMY OF VILLAGE ALASKA

While reliance upon food-gathering activities for subsistence is a distinctive characteristic of village Alaska, it is but one feature of the Native economy.[29]

Jobs in village Alaska are few; permanent full-time jobs at highest rates of pay are typically held by non-Natives. Seasonal or other temporary jobs, usually low paying, are often held by Natives; unemployment and underemployment rates among Natives are probably higher than among any other ethnic group in the nation.

Self-employment for cash in villages is usually part-time. Principal pursuits are fishing and trapping, arts and crafts production and operation of small cafes, stores, recreation halls, or movie houses.

Cash payments to some 1,200 Eskimo Scouts of the Alaska National Guard for drills total about $800,000 annually.[30] Most of this goes to the economies of their 66 villages in western Alaska.

Unemployment benefits and social security are important to the village economy particularly for the cash they provide in the winter. Also important for the same reason are welfare checks going to the old, the blind, the disabled, the needy having dependent children, and to the temporarily needy.

Prices are high in village Alaska, and for Natives, income is low. By any measure, most of Alaska's villagers are living in poverty.

Gathering Activities

Activities of food-gathering (and related subsistence activities) are important to probably more Alaska Natives today than when the U. S. purchased Alaska from Russia 100 years ago. While the extent of dependence varies by region, among communities within a region, and among families within communities, it appears that most village Alaskans subsist in some measure by hunting, fishing, and trapping; by gathering berries and greens; and, for some, by using animal skins in garment making;and by gathering driftwood, timber, or willows for fuel.

In western and northern Alaska there is generally a greater dependence upon food-gathering activities than in other regions. This reliance, portrayed recently by an economist, takes different forms:

Yukon-Kuskokwim Area:

> Salmon is the single most important food item of the subsistence economy of this area. Several species of salmon and other fish are harvested in season, and among the salmon are the king or chinook, chum or dog, coho or silver, and the sockeye or red. Salt water species, mainly herring and tom cod, are also important to the people in villages directly on the coast and on Nunivak Island. Many of the villages rely on dried herring for winter food and fish for tom cod during winter months. Other fish, less important in the overall catch, but with high utility when supplies in caches are low or fresh caught fish are desired, are the whitefish, blackfish, smelt, pike, stickleback, sheefish, "lush" or burbot, grayling, and trout. Lampreys are also utilized...Villages bordering the coast where marine mammals are readily available include as a supplement to their subsistence several varieties of seal, some walrus, and beluga whale.[31]

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[29] A serious handicap to the characterization of the economy of Village Alaska is the lack of data. As the area economist for the Bureau of Indian Affairs has noted: "Published figures on aggregate income by major regions and industries do not show the level of Native participation. Average annual per capita income figures of the Department of Commerce are more misleading than helpful as an indicator of income to Natives. Work force, employment, average monthly and annual income data of Alaska Department of Labor is impossible to relate to the Native economy, even in districts where the total population is largely Native. The number of licenses, payments to fishermen, or wages and salaries paid in processing plants and similar data from the Alaska Department of Fish and Game are also difficult to relate. The number and value of fur or skins taken can only be estimated, based on published data and opinions of those most familiar with Native participation.

Data is not available to do a village or regional analysis of nonworker-to-worker ratio by race or color. Nor, is it possible to determine the Native work force and employment from estimates of the Alaska Department of Labor for either villages, districts, or the entire state, even in areas or communities where the inhabitants are largely Native. Likewise incomes cannot be related to Native or non-Native groups from the statistics available from data-gathering agencies." H. P. Gazaway, undated narrative on economies of Village Alaska, 1968.

[30] Rounded figure supplied by Alaska Department of Military Affairs, July 6, 1967.

[31] John D. Abrahamson, *Westward Alaska: The Native Economy and its Resource Base*, a report prepared for the Federal Field Committee for Development Planning in Alaska, Anchorage, Alaska, 1968, p. 13.

Upper-Yukon Area:

The Natives of the Upper-Yukon area like those of the Yukon-Kuskokwim area look mainly to the river, the Yukon and its many tributaries, for their continuing, dependable food supply...The surrounding interior, forested, plateau, and mountain country of the Upper-Yukon area, unlike the tundra of the delta, offers the Natives a variety of terrestrial game animals for subsistence. Among these are the caribou, moose, and bear, and fur-bearing animals of which beaver, mink, muskrat, and marten are the most important...The fish resources include all species of salmon...whitefish, sheefish, pike, trout, and grayling. The salmon and sheefish are anadromous and the remainder are "resident" fish. Most of the salmon harvest is for subsistence purposes with over ninety percent of the catch being chum salmon.[32]

Seward Peninsula Area:

...The Kotzebue Sound is the northernmost area long the [Chukchi] Sea Coast for the occurrence of salmon in sufficient quantities to meet primary subsistence needs of the Natives... The Seward Peninsula area offers a greater variety of sea and terrestrial mammals, and fish for subsistence harvest than any of the other areas discussed. In addition to salmon and seal, there are walrus, beluga whale, and an occasional polar bear. Sheefish pike, and whitefish are also available. Among fur-bearing animals the muskrat is the single most important species, and its harvest ranks above other areas in many years...The westernmost herds of the Arctic Slope caribou, while making their annual migrations northward or southward, are within hunting range.[33]

Arctic Area:

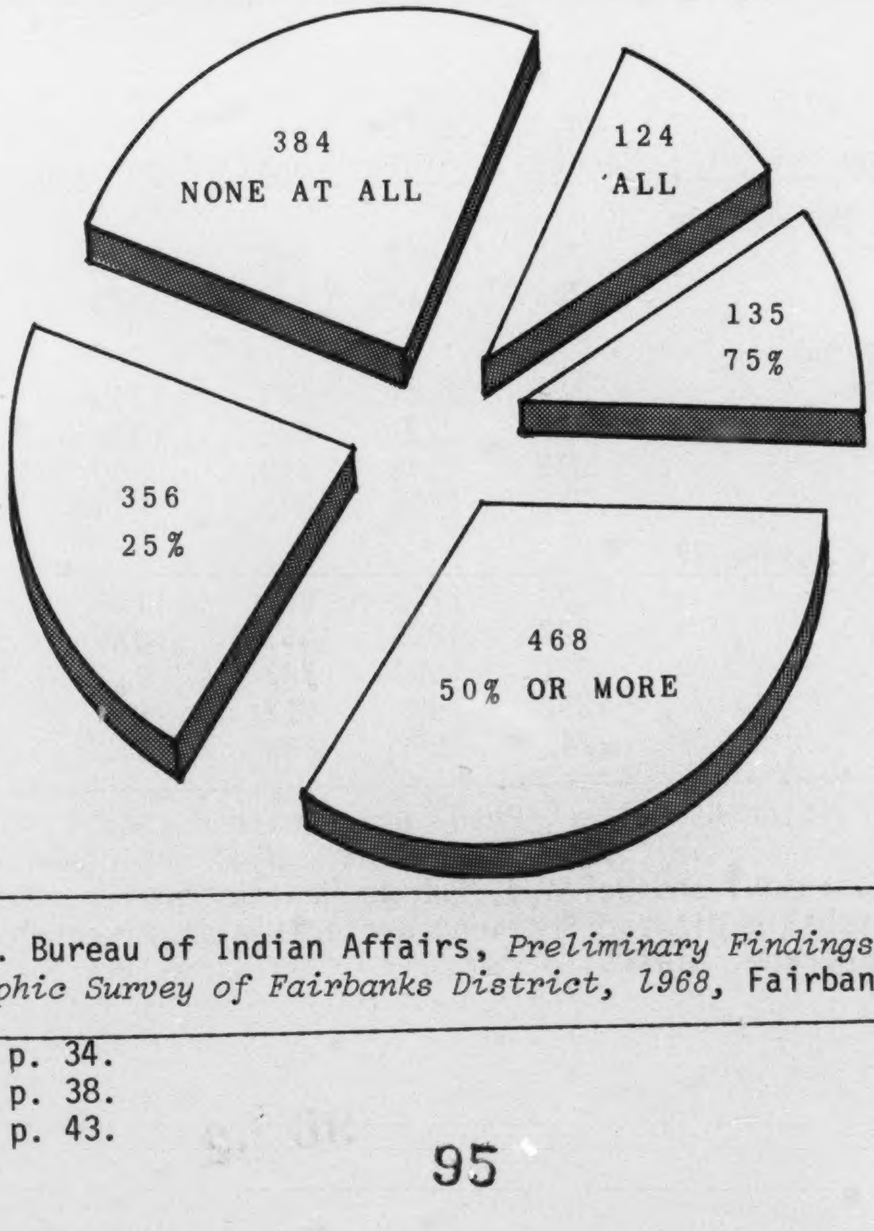
Sea mammals are the primary subsistence resource with whale, walrus, and seal representing the bulk of the total annual harvest. Less important in the annual harvest are varying amounts of fish, caribou, and birds. Salmon, which are so important to the livelihood of the Natives to the south, dwindle rapidly in numbers and importance in the economy north of the Kotzebue Sound. All species of sea mammals are migratory, and the success of the harvest is closely related to the many variations in the migrations, and to offshore and inshore ice conditions from which most of the harvest must be conducted.[34]

Ducks, geese, ptarmigan, and other wildfowl, wild rhubarb and other roots and greens, blueberries, and other berries, hares, squirrels, and other small animals, are also highly important as food to villagers in the North and West.

Except for 35 northern coastal and interior villages, there is little statistical data on a broad area basis on the extent of dependence of Natives upon food-gathering activities. In these places, fewer than one of four responsive Native adults told interviewers that none of their food supply was dependent upon hunting, fishing, or trapping. About one in twelve said that all of their food supply was dependent upon these activities. More than half of them said that such activities provided half or more of their food supply (See Figure II-7).

FIGURE II-7

DEPENDENCE UPON FOOD GATHERING FOR CONSUMPTION:
RESPONSES OF 1,467 NATIVE MEN AND WOMEN 16 YEARS AND OVER
IN 35 NORTHERN AND INTERIOR COASTAL VILLAGES (1968)



Source: U.S. Bureau of Indian Affairs, *Preliminary Findings, Demographic Survey of Fairbanks District, 1968*, Fairbanks, Alaska.

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[32] *Ibid.*, p. 34.
[33] *Ibid.*, p. 38.
[34] *Ibid.*, p. 43.

The importance of food-gathering activities in village Alaska is underscored in the fact, noted by authors of an eleven-village Native dietary study, that local food products, chiefly meat and fish, are still the foundation of their diets. While imported foods account for a greater proportion of calories than local foods in diets of most villagers studied (see Figure II-8), local foods are of much greater importance for proteins (see Figure II-9) and for several other nutritional elements.

Purchase of imported food items is restricted by their limited money economy and, as the dietary researchers note, "the great diversity of products desired--such as specific kinds of lumber for home, boat, sled, and snowshoe construction, material for fish nets, guns, ammunition, sun glasses, washing machines, outboard motors, gasoline camp stoves, lamps, radios, ready-made clothing and boots.... The desire for purchasable goods is the primary motive which prompts increasing numbers of these people tc seek seasonal wage work. This results in a continuing modification of many of the seasonal food-gathering activities, especially those normally occurring from late spring to about mid fall....In years when wage work is not generally available, there may be

FIGURE II-8

PROPORTION OF CALORIES FROM LOCAL AND IMPORTED FOODS BY VILLAGE

Village	No. Records	Per Capita Intake	Calorie Source Local	Imported	School	Mixed Food Preparations
N. Central Athapascan						
Allakaket	257	1963	491	1375	22	75
Huslia	369	2013	408	1530	-	75
Northern Eskimo						
Point Hope	362	2122	641	1349	81	51
Noatak	462	2231	848	1212	66	105
Shishmaref	372	1848	759	899	132	58
Shungnak	285	1894	873	849	92	80
Southwestern Eskimo						
Akiak	228	2261	841	1148	82	190
Napaskiak	422	1829	653	1021	66	89
Kasigluk	351	1903	782	949	68	104
Hooper Bay	1212	1956	717	1100	58	81
Newtok	247	1892	855	972	57	8

Source: Christine A. Heller, Ph.D. and Edward M. Scott, Ph.D., *The Alaska Dietary Survey 1956-1961.* U.S. Department of Health, Education, and Welfare, Public Health Service, Nutrition and Metabolic Disease Section, Arctic Health Research Center, Anchorage, Alaska, p. 35.

FIGURE II-9

PROPORTION OF PROTEIN FROM LOCAL AND IMPORTED FOODS BY VILLAGE, IN GRAMS

Village	No. Records	Total Per Capita Intake	Protein Source			
			Local	Import	School	Mixed
N. Central Athapascan						
Allakaket	257	127.6	70.2	48.5	2.2	6.7
Huslia	369	109.5	66.8	34.9		7.8
Northern Eskimo						
Noatak	462	170.7	127.5	27.7	2.0	13.5
Point Hope	362	120.6	81.4	29.8	3.6	5.8
Shishmaref	372	141.4	109.8	20.9	5.5	5.2
Shungnak	285	159.9	129.6	15.4	4.1	10.8
Southwestern Eskimo						
Akiak	228	146.2	110.8	25.3	3.2	6.9
Hooper Bay	1212	134.7	109.6	20.4	2.3	2.4
Napaskiak	422	129.3	107.9	16.4	2.3	2.7
Newtok	247	129.7	113.7	13.6	2.4	-
Kasigluk	351	184.8	152.9	21.1	2.3	8.5

Source: Christine A. Heller, Ph.D. and Edward M. Scott, Ph.D., *The Alaska Dietary Survey 1956-1961*. U. S. Department of Health, Education, and Welfare, Public Health Service, Nutrition and Metabolic Disease Section, Arctic Health Research Center, Anchorage, Alaska, p. 39.

an increase in local hunting and fishing activities, but in most villages there is a continuing decrease in the number of families who follow traditional food quest patterns." 35

Villagers also gather local resources in order to obtain the cash so much needed for imported products they are increasingly dependent upon. Furs may be sold raw, or they may be processed and used in making boots or garments for sale. Walrus ivory and whale baleen usually become art or craft objects before their sale, but raw ivory finds buyers among carvers who are not walrus hunters. Grasses and roots are woven into exquisitely fashioned baskets and trays, bones and animal hooves are worked into craft items, and wood is made into a variety of useful items or decorative forms for sale.

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[35] Christine A. Heller, Ph.D. and Edward M. Scott, Ph.D., *The Alaska Dietary Survey 1956-1961*. U. S. Department of Health, Education, and Welfare, Public Health Service, Nutrition and Metabolic Disease Section, Arctic Health Research Center, Anchorage, Alaska, pp. 155-156.

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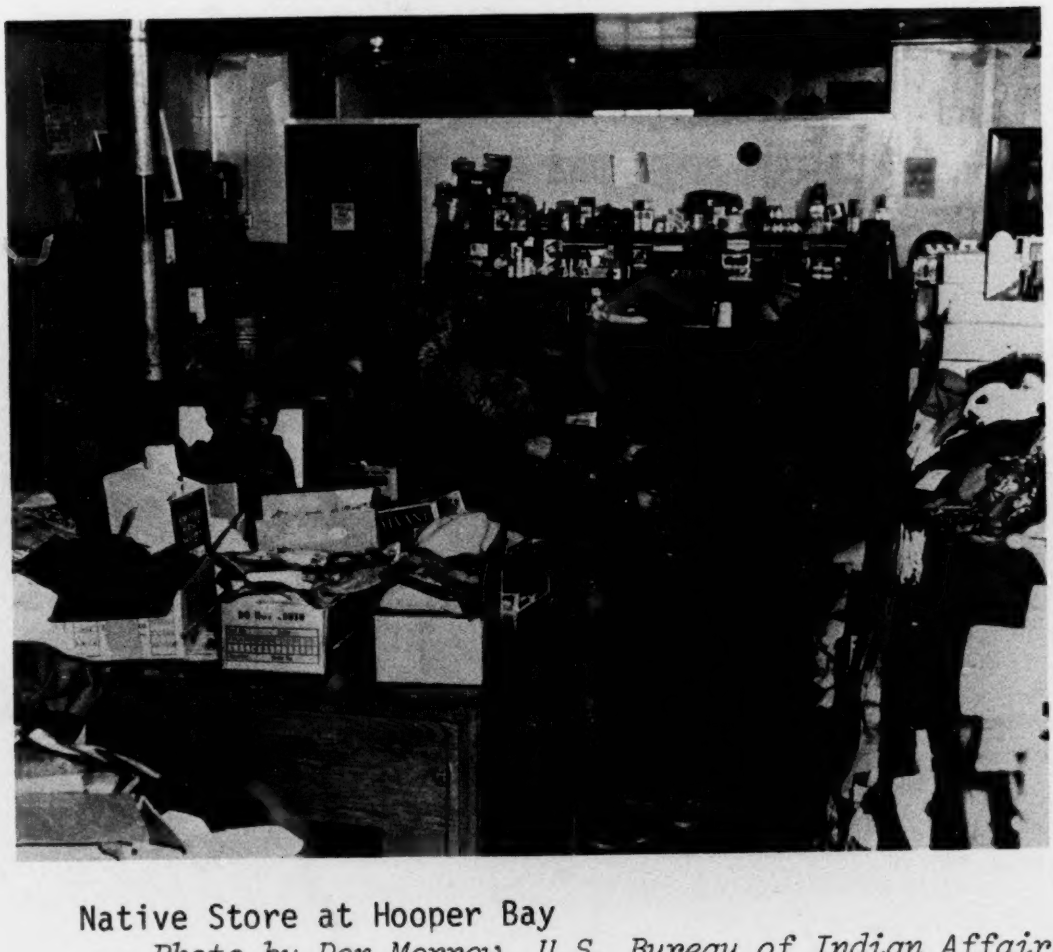
ANICA
POINT HOPE NATIVE STORE
GENERAL MERCHANDISE—FUR
ARTS·CRAFTS·ARTIFACTS

Native Store at Point Hope
Photo by Anchorage Daily News



Native Store at Hooper Bay
Photo by Don Morrow, U.S. Bureau of Indian Affairs

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In addition to the use of the land's resources for food for their families, food or other items for sale, villagers gather driftwood and other wood for shelter and for fuel, use furs and skins for clothing, and of course, catch substantial quantities of fish to provide themselves with one form of village transportation--food for their dogs.

In the Aleutians and southeastern Alaska, gathering activities for subsistence use are far less important, generally speaking, than they are in the North and West, but again, among villages and among families, there are variations. Native persons in these coastal areas generally engage in commercial fishing (or crabbing or shrimping) activities principally for cash.

Wage Employment

In most villages, Natives hold few full-time jobs. Typically they are in positions such as postmaster, school maintenance man, airline station agent, and--more recently--Head Start teacher and antipoverty grass roots worker. Some are operators of small stores, a few are airplane pilots. For most villagers, however, there are no full-time jobs available.

In larger Native places, such as Bethel and Kotzebue, the number of full-time job opportunities is greater, especially for women. Hospitals of the Division of Indian Health and offices of the Bureau of Indian Affairs are important employers of Natives, usually in lower-paying, nonprofessional jobs. Other agencies of government such as the U. S. Weather Bureau or the Federal Aviation Administration or agencies of the state are also sometimes employers in Native places.[36]

Natives with year-round jobs in villages of Alaska make up only about ten percent of the typical village work force.[37]

Because any source of cash income is increasingly needed, seasonal employment, usually away from a village, is highly important in the village economy (See Figure II-10).

The major activity providing seasonal employment for Alaska Natives is commercial fishing. This work lasts only from two to four months. Not only is the length of employment and amount of income highly variable from year to year and area to area, it is also highly variable from one boat to another fishing in the same area and season. Income varies with the catch of fish, price of product and costs of boats, gear, and operations. Most variable from year to year and area to area is the size of catch.

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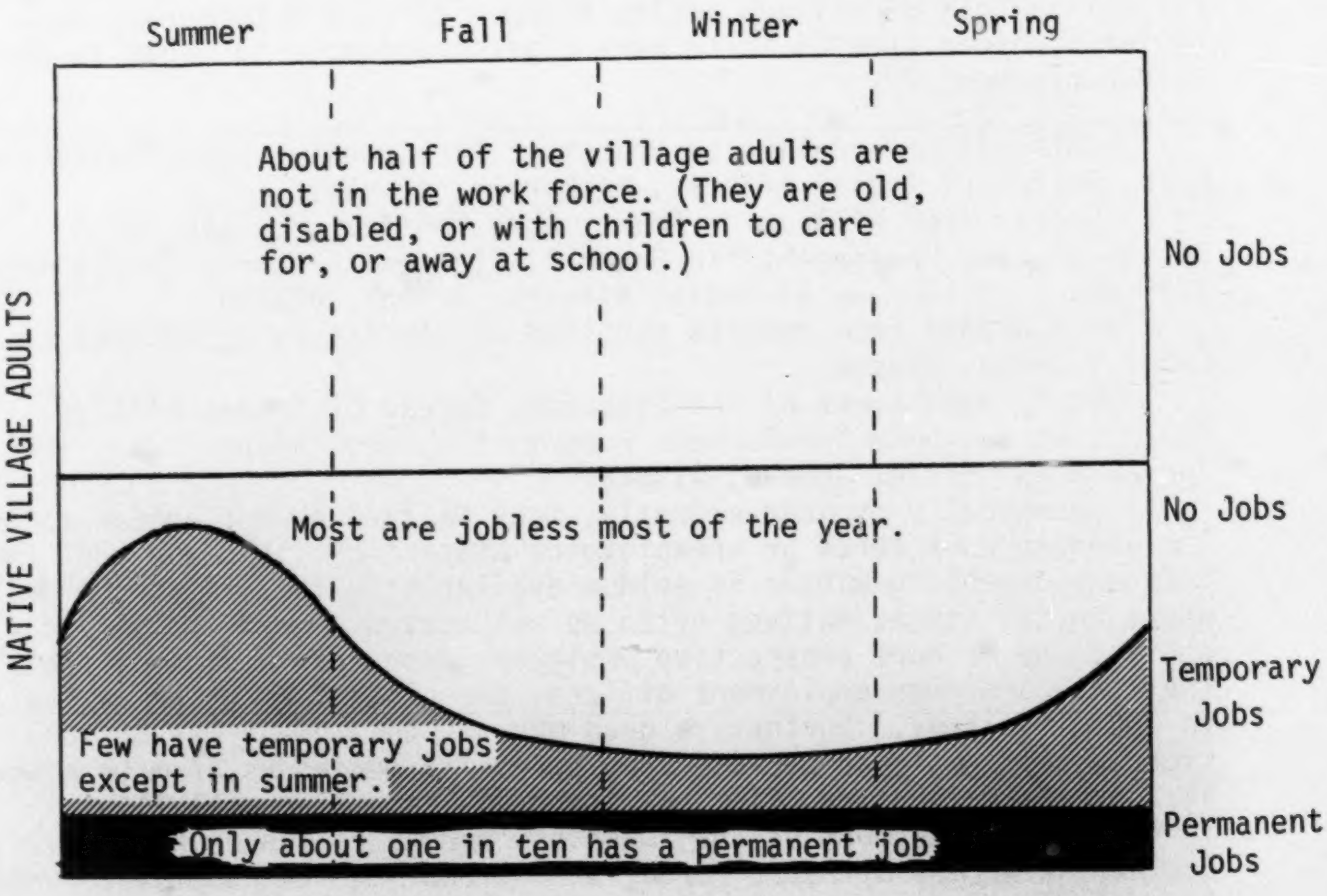
[36] Robert Arnold and Esther Wunnicke, *Alaska Natives and Federal Hire*, Report for Federal Field Committee for Development Planning in Alaska, Anchorage, Alaska, 1967.

[37] Interview with H. Prent Gazaway, Area Economist, U. S. Bureau of Indian Affairs, Juneau Area Office, Juneau, Alaska, May 15, 1968.

Average net incomes to Native workers in the southeastern canneries may range as high as $3,000 in a top season, but over a five-year period regular workers will do well to average $1,000 to $1,500 net income a season. If their employment is in more than two quarters of the year, some incomes will be supplemented by unemployment benefits. Annual incomes to boat crew members may reach $5,000, but the average over a five-year period for most will more nearly be $3,000. Native fishing boat owners in southeastern Alaska will average $6,000 to $8,000 annually in net income.[38]

FIGURE II-10

ILLUSTRATIVE SEASONAL VARIATIONS IN TEMPORARY EMPLOYMENT AND UNEMPLOYMENT AMONG ALASKA NATIVE VILLAGE ADULTS



Source: Labor Force reports and village profiles prepared by the Bureau of Indian Affairs, Juneau Area Office, Juneau, Alaska.

In the Bristol Bay area the economy revolves around salmon canning. A majority of the resident fishermen and many cannery workers are Native. If they have their own boats or fishing sites, they may be prosperous every three to five years when they have a bumper season. Between the good years they may have two or three complete failures in which they are more likely to lose money than show a net income, then another one or two years when they realize a fairly good net income--say $5,000 net for the fisherman who owns his own boat. Overall, the net incomes probably wouldn't average more than $3,000 to $6,000--a good return for three or four months' work, but not enough to pay for a boat and gear, and to support a family over twelve months.[39]

Workers migrate to cannery sites to obtain even short periods of wage employment and from places as distant as Kotzebue and Point Hope in the northern part of the state.

For Bristol Bay canneries 1967 was a poor season. Normally this work lasts from two to six weeks and for a few workers perhaps eight weeks or more. It is said that a typical worker is considered lucky if he gets back to his home in the village with $500 to $800 for the season. The average in 1967 was less than $500.[40]

In the Aleutians the development of crab fishing and processing over the past ten years has increased local employment and significantly extended the working season. Fishermen and cannery workers are employed six to ten months now, instead of two to four months as they were when they were dependent only on salmon fishing.

In the lower Yukon and Kuskokwim areas of western Alaska, there has been an erratic increase in commercial fishing activities the past five years. At present commercial utilization is generally believed to be below maximum sustainable yield in each area. There has been a tendency for commercial fishing to concentrate closer to the sea near the river's mouth because the quality of salmon is best when it comes from the sea, and water transport of fish is much less costly than air.

In this area there is generally a lack of adequate processing and holding facilities. Efforts of Native fishermen often are inefficient due to the lack of organization and group effort and lack of technical and managerial know-how--both for catching and marketing quality fish at a premium price.

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[38] *Ibid.*

[39] *Ibid.*

[40] Information supplied by the Superintendent, Bethel District, Bureau of Indian Affairs, Bethel, Alaska, May, 1968.

Norton and Kotzebue Sound Eskimos have been fishing commercially in recent years, on a limited scale. Their catch is of limited quantity, and although prices have improved in recent years, seldom do fishermen net more than $300 to $800 a season. This involves 30 or 40 fishermen in the Kotzebue area and perhaps twice as many in the Unalakleet, Shaktoolik and Golovin area.

Just as government is a principal provider of full-time employment in village Alaska, so it is a provider--directly and indirectly--of seasonal job opportunities. Construction of schools by the Bureau of Indian Affairs means up to 500 Natives will be employed through most of the summer.[41] Construction of defense facilities at remote sites means a few jobs, too, particularly for Native laborers. Forest fires on the public domain result in large numbers of jobs for villagers; in 1967 the Bureau of Land Management employed 1,284 Natives as firefighters.[42] Fish and game protection by the state requires seasonal employees, and some are Natives.

Large numbers of seasonal jobs for young villagers are offered by the state-administered federal antipoverty program, the Neighborhood Youth Corps.

Other villagers find seasonal employment in reindeer roundup and slaughtering (one or two months at best), in lightering goods from ship to shore and in other tasks related to water transport, and in mining and other activities.

Because seasonal employment for some villagers is of such short duration (especially for those employed at salmon canneries) it may not extend adequately into more than one quarter of a benefit year with the result that such employees would be ineligible for unemployment compensation. Others, however, particularly if employed in construction, will be eligible. Benefits paid into the ten predominantly Native census districts over each of the last three years have been about $1.4 million, but no data exists to identify what portion of the benefits have gone to Natives.[43]

Joblessness

Joblessness in village Alaska approaches 80 to 90 percent in the winter and drops to 25 percent, or possibly less, in summers.[44]

The extent of village joblessness is understated in Alaska Department of Labor reports owing to uniform federal definitions of unemployment--definitions inappropriate to remote villages.[45] As a result, Natives who are jobless and who want jobs, may or may not be counted as "unemployed." Even these understatements, however, show unemployment in Native districts in the winter (1966) to range from nearly 12 percent (in the Aleutians) to 70 percent (in the Bethel district).[46]

Estimates of Native employment and unemployment, compiled by the Bureau of Indian Affairs semiannually in March and September, are done by Bureau administrative units, all of which, except for two, include not only villages, but cities as well. The two units that include only Native places (covering five census districts in western Alaska) show twice as many jobless as jobholders--unemployment of 65 and 66 percent.[47]

In these village districts there are nearly 1100 nonworkers for every 100 workers.[48] In the city of Anchorage the ratio is about 250 nonworkers for every 100 workers. Or, put another way, one of every three persons in Anchorage has a job; one of every twelve Natives in all of village Alaska has a job.[49]

Joblessness in village Alaska should not be attributed simply to a lack of interest among villagers, for interest in jobs is high. And there is a willingness to move to take jobs. But--owing to a preference for village life, a sense of being ill-equipped for city life and jobs, an inability to command adequate salaries given their lack of education and training, or to a combination of reasons--the willingness of village adults to move to obtain temporary work is far stronger than it is to make a permanent move in order to obtain employment.[50]

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[41] Information supplied by Branch of Plant Design and Construction, U. S. Bureau of Indian Affairs, Anchorage, Alaska.

[42] Letter from William H. Adams, Area Manager, McGrath, U. S. Bureau of Land Management, to Bruce A. Elmgrem, Resource Development Officer, U. S. Bureau of Indian Affairs, Bethel, Alaska.

[43] Calculated from reports supplied by the Alaska Department of Labor, Juneau, Alaska.

[44] U. S. Department of the Interior, Bureau of Indian Affairs, *Needed: An Economic Development Program for Rural Alaska*, May, 1965, Juneau Area Office, Juneau, Alaska.

[45] Technically or inadvertently, many Natives do not appear to be included in work force or unemployment statistics. Because they know that employment in winter is seldom available in the villages or elsewhere in the state, Natives often do not actively seek employment, i.e. contact one or more prospective employers each thirty days or one of the state's eleven employment offices, the closest of which may be 100 to 300 miles away. Further, a good many of this group may be considered self-employed because they spend fifteen hours or more a week at subsistence hunting, fishing, trapping, and other activities.

[46] U. S. Department of the Interior, Bureau of Indian Affairs, *Semiannual Report of Labor Force, Employment and Unemployment*, Juneau Area Office, Juneau, Alaska, September, 1967, and March, 1968.

[47] *Ibid.*

[48] *Ibid.*

[49] Alaska Department of Labor, Research and Analyses Section, *Work Force Estimates, Alaska by Area and Industry, 1959-1966.*

[50] Alaska Native Brotherhood, and Alaska State Community Action Program, *Employment Development Conference*, Nome, Alaska, November 30-December 1, 1967, p. 51.

But interest in wage employment, particularly if it means relocating, is certainly not characteristic of all village adults. Often their interest is in pursuing the old ways. Of about 1,000 men (sixteen years and over) in northern interior and coastal villages, interviewed early in 1968, about one-fourth told interviewers they would not accept any employment. Of the more than 750 who said they would accept employment, nearly 300 said they would accept only temporary employment--and a third of these said they would accept such employment only near home. Among women the pattern was similar, but there was a greater proportion who said they would reject employment, who preferred temporary jobs, and who wanted to stay near home (See Figure II-11).

FIGURE II-11

EMPLOYMENT AVAILABILITY: RESPONSES OF 1,541 NATIVE MEN AND WOMEN 16 YEARS AND OVER IN 35 NORTHERN AND INTERIOR COASTAL VILLAGES (1968)

	Men	Women
Not Available:		
Would not accept employment	228	231
Unable to accept employment	53	30
Available:		
Would accept only temporary employment:		
Near home	110	63
Within Alaska	94	32
Anywhere	90	20
Would accept permanent employment:		
Near home	85	71
Within Alaska	153	53
Anywhere	159	47
Other, comment	22	10
Total	994	557

Source: U. S. Bureau of Indian Affairs, *Preliminary Findings, Demographic Survey of Fairbanks District, 1968*, Fairbanks, Alaska.

Those willing to move for temporary or permanent employment are handicapped by the remoteness of most villages from job opportunities. If they learn of job openings, their knowledge may come after jobs are filled by others. If ranking of applicants is by years of experience, village applicants will probably fall to lower positions of preference. If written applications are submitted, the lesser education of the Native applicant reveals itself on the form. If aptitude tests or other screening devices are used by an employer, the Native may suffer the consequences of a cultural background different from that of the test writers. If accepted for work in a city, the rate of pay--given his lack of education and training--may condemn him and his family to a deeper poverty than if he had remained in the village.[51]

Income and Cost of Living

Low incomes, seasonal and uncertain from year to year, typically large families, and high prices create severe problems for village Natives. Alaska has the highest cost of living of all the states based on surveys that include only the larger cities where prices are considerably lower than in villages. In 1967 living costs in Alaska's principal cities were 18 to 32 percent above Seattle.[52] Prices in the villages range to 74 percent above Seattle, and for some items, 100 percent higher (See Figure II-12).

Many things contribute to high prices and costs--arctic climate, remoteness, sparse population, small volumes, limited competition, together with high wages and transport costs. Supplies must be stocked year-round from the one or two shipments coming by water during the short summer season, or they must come by air. The cost of shipments from Seattle to the villages by water ranges from four to twelve cents a pound. Perishable and other items ordered by air from Seattle cost twenty to thirty cents a pound. Air freight costs from Anchorage or Fairbanks to communities in western Alaska vary from five to fifteen cents a pound.[53]

Production goods are higher priced also--guns, boats, nets, petroleum products, snow machines, lumber, tools, etc. A Native family in Barrow, Fort Yukon, Gambell, may pay $2,000 for necessities that a family in Houston or Washington, D. C. can buy for $1,000. Commodities costing $1,300 to $1,400 in Ketchikan or Juneau, if available, may cost $1,800 to $2,000 in Atka, Kotzebue, or Fort Yukon.[54]

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[51] Arnold and Wunnicke, *op. cit.*, pp.3-5.

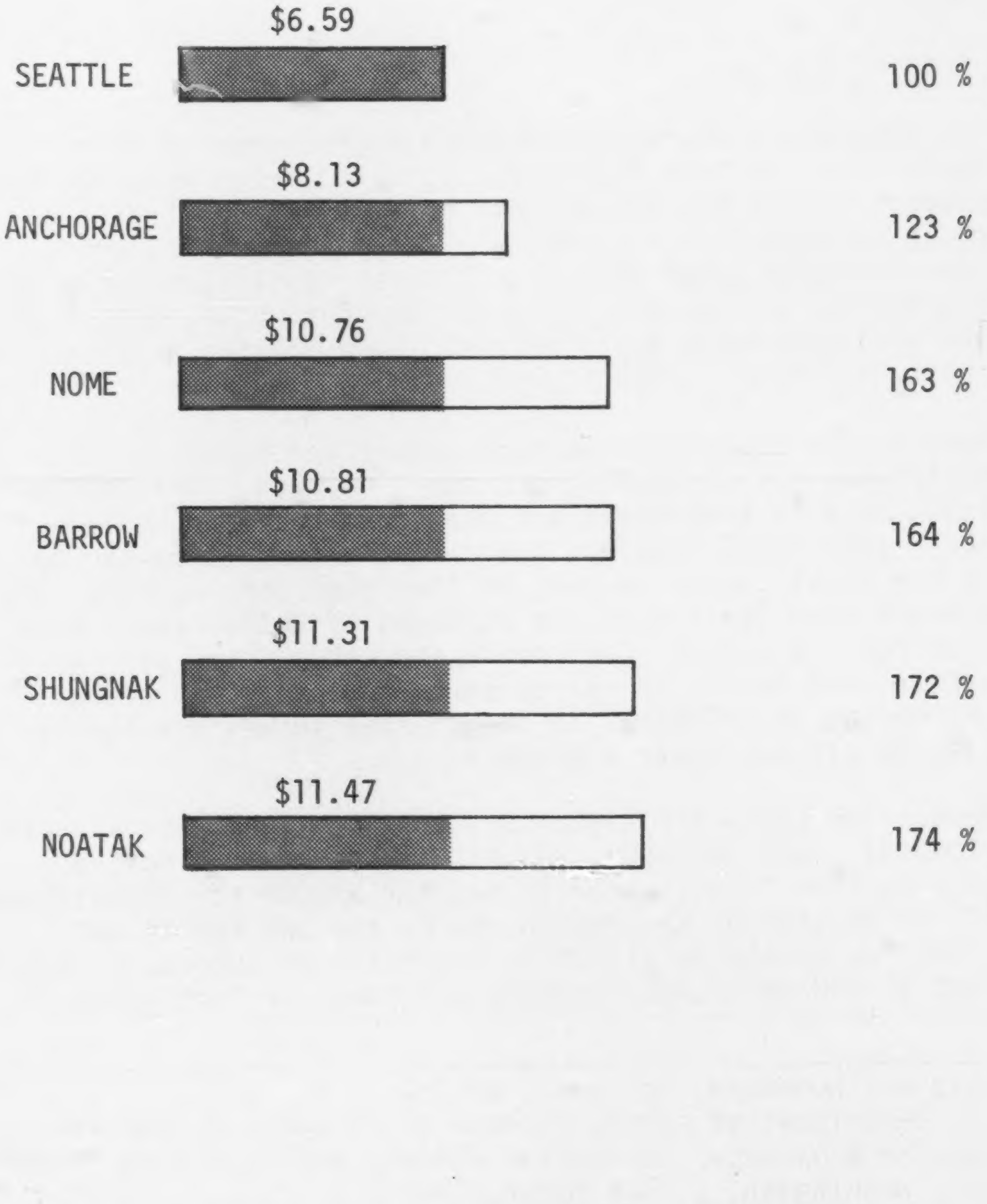
[52] U. S. Department of Labor, *Indexes of Consumer Prices and Living Costs for Anchorage, Fairbanks, Juneau, and Ketchikan, Alaska, Autumn, 1967*, Washington, D. C., March, 1968.

[53] Gazaway, *Interview, op. cit.*

[54] U. S. Department of the Interior, Bureau of Indian Affairs, *Needed :An Economic Development Program for Rural Alaska*, May, 1965, Juneau Area Office, Juneau, Alaska.

FIGURE II-12

RETAIL FOOD PRICES OF 14 BASIC COMMODITIES, SEATTLE, WASHINGTON, AND FOUR NORTHWESTERN ALASKA VILLAGES, 1963



Source: U. S. Bureau of Indian Affairs, *Profile of the Native People of Alaska*, Juneau Area Office, Juneau, Alaska, 1967, p. 42.

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Cash income needed for a typical family of five to six members in most villages is $6,000 to $8,000 a year. Through subsistence activities--hunting, fishing, using local timber for heat and cooking, gathering greens, berries, and roots--this requirement may be reduced $1,000 to $3,000. Even then, $5,000 a year will not buy a family what it will in other states--decent housing, clean water, sewers, electricity, red meats, fresh fruits and vegetables, an automobile or television. Were it not for food-gathering activities, free public services, and lower living standards, a minimum standard of living in rural Alaska, for a family of six, would likely require $8,000 to $10,000 a year.[55]

Incomes for village Alaskans are far lower than required, and far lower than for Alaskans generally. Native income (earned and unearned) in 24 villages of southcentral Alaska in 1966 was estimated to average about $4,000 per family or nearly $800 per person.[56] Total Native income in 1967 in 58 villages in southwestern Alaska was estimated to average almost $3,400 per family, or nearly $600 per person.[57] For Alaskans generally, family incomes in 1967 averaged more than $10,000 or about $3,629 per person.[58]

In these recent surveys, *average* incomes are described, not medians. The small number of Natives with high incomes (over $10,000) tend to raise the average considerably for families who have low annual incomes. Median cash income of Native families in villages of Alaska, excluding the few Native communities where earned incomes are high (such as St. Paul), is estimated at about $2,000 annually.[59]

Reasons for the poor economic circumstances of villagers are not difficult to find. In brief, as the Juneau area office of the Bureau of Indian Affairs puts it: "Poverty exists among most of the Natives, not because they are not industrious, and prefer to be poor, but because there is no means for them to increase their cash income."[60]

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[55] *Ibid.*

[56] Survey conducted by the Superintendent, Anchorage District, Bureau of Indian Affairs, Anchorage, Alaska.

[57] U. S. Department of the Interior, Bureau of Indian Affairs, *Population Support Capacity Report, Bethel District*, Juneau Area Office, Juneau, Alaska, March, 1967.

[58] *Anchorage Daily News*, April 29, 1968.

[59] This estimate is based upon a review of village profiles prepared by the Bureau of Indian Affairs, VISTA workers, and the Division of Indian Health.

[60] H. P. Gazaway, *National Program Inadequacies and Needs to Better Serve Rural and Native Alaska*, a summary prepared at the request of the Chairman, Federal Field Committee for Development Planning in Alaska, January 7, 1966.

Welfare

Figuring substantially in the economy of village Alaska (though less than generally assumed) is unearned income going as payments made by the State Division of Public Welfare to Natives who are old, disabled, blind or have dependent children (but who have little or no income) and by the Bureau of Indian Affairs to Natives if they are ineligible for state categorical programs, but who are in need of temporary financial assistance.

No statewide portrayal exists of the relative dollar importance of welfare funds to village economies, but a glimpse is available in the results of a recent detailed survey of nearly 5,300 Natives in 35 northern interior and coastal villages. In 1967, according to income reported by all Natives sixteen years of age and over, earned income totaled about $3.3 million[61]; unearned income amounted to about $645 thousand.[62] For every dollar in their economies coming from welfare programs, $5 was earned--virtually all as wages from jobs.

Welfare dollars do have substantial impact. Having greatest impact of the several categories of programs is Aid to Families with Dependent Children, a program which puts about $1 million annually into about 750 households in villages. The typical case is a mother and three children; the average payment per case is $127 monthly.[63]

Payments made under this program generally fall below the calculated needs of recipients. State budget schedules show, for instance, the needed monthly allowance for a mother and three children in northern Alaska to be $186 plus rent and fuel; the maximum established by state law for such a family, however, is $140. Based upon a 1967 sample (representing about one-third of all cases) it appears that five of six families (Native and non-Native) receive allowances below their needs. Over half have an unmet need of more than $51; nearly one-third have an unmet need of more than $101 a month.[64]

Villagers appear to require longer periods of assistance than other Alaskans receiving Aid to Dependent Children. About one-third of the recipients in western Alaska--nearly all of whom are Natives--have been receiving assistance for five to ten years. This duration was characteristic of only one-fourth of the recipients across the state (See Figure II-13).

Reasons for the extended duration are not hard to find. Investigators report:

> There are many reasons for continued dependency on AFDC; however, the most obvious reasons for this high number of continuous AFDC recipients appears to be lack of services provided to those who have been receiving assistance and a lack of economic opportunity. This is vividly demonstrated by a comparison of the percentage

who have been receiving assistance for more than five years in Anchorage as opposed to Bethel [Eskimo town in western Alaska]. In Anchorage we find that only 22 percent of those surveyed have been receiving assistance for more than five years. In Bethel, that percentage is markedly increased to 47.2 percent (nearly one-half of the entire group surveyed).[65]

FIGURE II-13

DURATION OF ASSISTANCE TO RECIPIENTS OF AID TO DEPENDENT CHILDREN, NATIVE DISTRICTS COMPARED WITH STATE

Years Assisted	Nome-Bethel Welfare Districts		All Eight Welfare Districts	
	Cases	Percent	Cases	Percent
Less than 1/2 year	17	8.6	49	10.3
1/2 - 1 year	13	6.7	57	12.0
1 - 1-1/2 years	17	8.6	48	10.1
1-1/2 - 2 years	14	6.1	36	7.6
2 - 3 years	21	10.5	60	12.7
3 - 4 years	14	6.1	32	6.7
4 - 5 years	15	7.7	28	5.9
5 - 10 years	62	30.5	105	22.2
10 years or more	28	13.1	49	10.3
Unknown	4	1.9	8	1.6
Totals	205	99.7	472	99.4

Source: K. J. Anderson, Margaret Cavanagh, and J. T. Cross, *Caseload Survey of Aid to Families with Dependent Children,* National Association of Social Workers, Inc., Alaska Chapter, Juneau, Alaska, 1968, Table 2.

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[61] U. S. Department of the Interior, U. S. Bureau of Indian Affairs, Preliminary Findings, *Demographic Survey of Fairbanks District, 1968,* Fairbanks, Alaska, 1968.

[62] Alaska Division of Public Welfare, "Tabulation of the Proportion of Native and non-Native recipients on Public Assistance by Caseload and Welfare Districts," 12-month average 1966-67, and U.S. Bureau of Indian Affairs, "General Assistance by Fiscal Year by Village and Average Number of Cases Per Month", Juneau Area Office, Juneau, Alaska, 1963-67.

[63] Alaska Division of Public Welfare, *op. cit.*

[64] K. J. Anderson, Margaret Cavanagh, and J. T. Cross, *Caseload Survey of Aid to Families with Dependent Children,* National Association of Social Workers, Inc., Alaska Chapter, Juneau, Alaska, 1968, p. 9.

[65] *Ibid.,* p. 4.

On the basis of data from western Alaska, it appears that the principal cause of a Native family's reliance upon this public assistance program is that the father is dead or physically incapacitated. These circumstances account for sixty percent of the children benefiting in the West--about twice the percentage across the state generally. Another twenty percent of the children in the West benefiting from this program are illegitimate--a percentage only slightly higher than among all children benefiting from the program across the state generally.[66]

Given the meager allowances authorized under Alaska law, the Native woman with dependent children may be better off living in the village instead of living in an urban area. There is usually little shelter cost in the village, since the woman can live with her parents or can somehow acquire enough surplus supplies to build her own dwelling. Use of locally obtained foods reduce her need for purchased commodities. Some women with children have in fact returned to villages from urban areas, reportedly because of the low level of welfare payments.[67]

The Old Age Assistance program, also administered by the state, puts about three-quarters of a million dollars annually into the hands of some 800 villagers. Average payment (based on 1966 figures) is about $89 a month.[68] That Natives constitute a high (seventy percent) percentage of Old Age Assistance recipients may be attributed to the fact that relatively few of those over 65 today worked for wages and made contributions to the Social Security system.

Two other adult public assistance programs--Aid to the Blind and Aid to the Disabled--put about $175 thousand into village Alaska annually. Average monthly payment for each of the 180 village recipients is about $80.[69] That Natives make up a large proportion (91 percent and 65 percent) respectively of all blind and disabled who are assisted in Alaska is largely the result of poor health conditions in villages. And the near absence of programs for the handicapped in the state requires that public assistance be rendered.

Although public assistance programs are commonly assumed to be hurtful to the character of beneficiaries, anthropologists writing recent detailed accounts of village life do not offer such observations. Writing of the southwestern Eskimo village of Napaskiak (in 1956) Oswalt says:

> One result of the Old Age Assistance and Social Security programs has been to free the old people who qualify for it from relying completely upon relatives and friends for their support. Such persons still, however, live on gifts of food or meals and use their cash for purchasing toys and clothing for their grandchildren, clothing for themselves, and small luxury items. Another interesting effect of the Old Age Assistance program has been for

individuals under its coverage to live alone in houses of their own. This has occurred in five instances within the past few years and appears to be a distinct trend.[70]

Writing of the northern coastal Eskimo community of Point Hope (in 1956) Van Stone says:

> In families where there is an old person a large number of people are often indirectly dependent upon the monthly Old Age Assistance check. This income has greatly strengthened the position of old people, who formerly were dependent entirely on their relatives for support. Old people without families were often destitute in earlier days and sometimes were forced to beg from neighbors. Similarly, the position of widows has been greatly improved by the payment of Aid to Dependent Children. Formerly widows were entirely dependent upon the charity of their relatives and usually returned to their parents' homes after their husbands died. They now are able to set up and maintain independent homes.[71]

Writing of the northern coastal Eskimo community of Kivalina (in 1959-60) Saario and Kessel say:

> Welfare services do not appear to have had a detrimental effect in the village, although it is a service that some outside white persons have viewed as encouraging dependence on the government and creating a lack of initiative. Most of the welfare payments in Kivalina are either Aid to Dependent Children or Old Age Assistance. Since part of the old Eskimo value orientation included helping those who were needy and unable to help themselves, the help extended by the government agencies appears as a normal and reasonable action.

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[66] *Ibid.*, Table 4.

[67] Interview with Robert M. Davis, Superintendent, Nome District, Bureau of Indian Affairs, May 20, 1968.

[68] Alaska Division of Public Welfare, *op. cit.*

[69] *Ibid.*

[70] Wendell Oswalt, *Napaskiak*, University of Arizona Press, Tucson, Arizona, 1963, p. 100.

[71] James Van Stone, *Point Hope*, University of Washington Press, 1962, pp. 134-5.

> As long as the majority of families are able to subsist by their own efforts, welfare will probably remain a welcome help for people who would otherwise be the responsibility of the village. However, should circumstances arise whereby the village residents might not be able to gain their own livelihood and might find it necessary to rely mostly on welfare payments to exist, the resultant emotions and reactions would probably be most detrimental.[72]

Welfare funds in the form of temporary relief from the Bureau of Indian Affairs amount to nearly three quarters of a million dollars in the economy of village Alaska. These funds go to Native persons who are needy, if they are ineligible for welfare programs operated by the state. Called "General Assistance" by the Bureau, this program corresponds to the General Relief program of the state under which needy non-Natives are given temporary financial help.

While villagers make up about seventy percent of the state's Native population, they make up only about sixty percent of the recipients of the Bureau's total program, and they receive only about sixty percent of funds expended under it.[73] In 1967 the average village case received about $400--this based upon 1,771 cases representing perhaps 6,000 persons.

The amount of assistance given depends upon the need of the individual villager. Determination of the amount of assistance will be guided by the state's budget schedule for its welfare cases, but not bound by it. There is no ceiling on the amount of the Bureau's grant nor any limitation imposed upon its duration.

For most recipients the duration of assistance is limited to the three leanest months of the winter. Data for western Alaska over the past four years show about 61 percent of the cases helped for three months or less; and another 20 percent aided for four to fourteen months (See Figure II-14). Only 10 percent were helped for twelve months--and most of these were not employable.

Only about two-thirds of all cases receiving general assistance from the Bureau are classified as "employable." The others are not eligible for state-administered public assistance, but they are not able to obtain and hold jobs. Villagers who have little or no education or training but who are able to hunt and fish are classified as employable if they are living in the village.[74]

In months that hunting, fishing, trapping, and other food gathering activities are carried out, there is a great decline in the number of persons receiving general assistance. Likewise as jobs become available--even away from the villager's home--the number of welfare cases drop (See Figure 11 in Chapter I).

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Responsiveness of Natives to job opportunities and a corresponding decline in financial assistance is illustrated in general assistance data for the northernmost Eskimo town, Barrow, over the past five years (See Figure II-15). As construction and other activities made jobs available, the amount of assistance paid out in Barrow dropped from 1963 to 1967 from nearly $30,000 to about $6,500--not far from one-fifth its former size. And this decline in welfare took place while the population grew by perhaps 200 persons.

The other three large places in western Alaska--Nome, Bethel, and Kotzebue--are not markedly different in apparent vitality of economy. Though they have about the same number of Natives, there are great differences in the amount of general assistance money paid

FIGURE II-14

DURATION OF GENERAL ASSISTANCE EXTENDED TO VILLAGERS IN NOME AND BETHEL DISTRICTS OF THE BUREAU OF INDIAN AFFAIRS, 1964-1967

Months Assisted	1964		1965		1966		1967	
	Cases	Percent	Cases	Percent	Cases	Percent	Cases	Percent
1 - 3	419	61.4%	451	63%	492	61.4%	586	62.3%
4 - 6	126	18.3%	117	17%	142	18.0%	191	20.3%
7 - 9	44	6.3%	55	8%	58	7.2%	76	8.0%
10-12	93	14.0%	85	12%	108	13.4%	89	9.4%
Totals	681		716		800		942	

Source: U. S. Bureau of Indian Affairs, Chart of "Composite General Assistance, Fiscal Year 1964-1967," Juneau Area Office, Juneau, Alaska.

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[72] Doris J. Saario and Brina Kessel, "Human Ecological Investigations at Kivalina," in Norman J. Wilimovsky (ed.) and John N. Wolfe (ed.), *Environment of the Cape Thompson Region, Alaska*, U. S. Atomic Energy Commission, Division of Technical Information Extension, Oak Ridge, Tennessee, 1966, p. 1027.

[73] U. S. Department of the Interior, U. S. Bureau of Indian Affairs, "General Assistance by Fiscal Year by Village and Average Number of Cases Per Month," Juneau Area Office, Juneau, Alaska, 1963-67.

[74] Letter from Gordon Cavnar, Area Social Worker, U. S. Bureau of Indian Affairs, Juneau Area Office, Juneau, Alaska, August 24, 1967.

out in each community (See Figure II-15). Nome leads all predominantly Native places in the state in the total amount of Bureau welfare received over the five-year period--almost $182,000. Next ranking of these three cities is Bethel with about $84,000. Third of these three is Kotzebue with almost $34,000 in Bureau relief in five years--about one-fifth of the amount going to Nome residents.

That reliance upon Bureau relief funds varies widely from village to village is indicated, too, by the fact that fifteen places smaller than Kotzebue received greater amounts of assistance over the five years 1963-1967. And most of these places had fewer than half as many people as Kotzebue. On a per capita basis, Kotzebue received about $4 annually in general assistance over the five-year period, putting Kotzebue in the bottom fourth of Native places in terms of per capita assistance.[75]

On a per capita basis, general assistance expenditures to villages over the past five years ranged from zero (in eleven places) to about $80 annually (in three places). Half of the villages received less than $12 per capita annually.[76]

"Without exception, Bureau social workers agree," writes the Bureau's head of social services in Alaska, "that each Native community would prefer the chance and opportunity to work in preference to receiving a grant. Also, individual recipients of Bureau assistance frequently return checks because circumstances have changed that permit them to be self-sufficient. Rather than being characterized as dependent, unmotivated, lazy, and some other uncomplimentary terms, the Native citizen and the Native community have demonstrated a desire and willingness to take care of themselves."[77]

FIGURE II-15

CHANGES IN TOTAL AMOUNTS OF GENERAL ASSISTANCE TO
FOUR LARGEST PREDOMINANTLY NATIVE COMMUNITIES
FISCAL YEARS 1963 - 1967

	1963	1964	1965	1966	1967
Barrow	$29,603	$14,119	$ 5,444	$ 6,373	$ 6,462
Kotzebue	7,605	6,006	7,823	9,856	5,400
Bethel	10,861	9,915	11,520	17,291	34,038
Nome	31,786	33,586	30,769	48,462	37,285

Source: U. S. Department of the Interior, U. S. Bureau of Indian Affairs, "General Assistance by Fiscal Year by Village and Average Number of Cases per Month," Juneau Area Office, Juneau, Alaska, 1963-1967.

Bethel, *Photo by Anchorage Daily News*

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[75] U. S. Bureau of Indian Affairs, *op. cit.*

[76] *Ibid.*

[77] Memorandum dated October 7, 1966 from the Bureau of Indian Affairs, Area Social Worker, Gordon Cavnar, to the Bureau's Area Economist, H. P. Gazaway.

EDUCATION AND TRAINING

Village Adults

In village Alaska Native high school graduates are rare, and Native college graduates are even rarer. Most village adults have less than an elementary education, and large numbers have no formal education at all.

Figures from 1960 of rural non-farm nonwhites--nearly all of whom are Natives--show that, of those 25 years old or older:

--almost 21 percent were without schooling;
--almost 25 percent had completed no more than the fourth grade;
--about 15 percent had completed the fifth or sixth grade;
--less than 11 percent had completed the eighth grade;
--only 9 percent had completed high school;
--and only 9/10 of 1 percent had completed college.[78]

These 1960 data show about half of the rural Native population having a sixth grade education or less. There are also enormous regional differences; medians ranging from 1.6 to 7.0 in census districts of northern and western Alaska; and 8.2 to 9.0 in districts of southeastern Alaska (See Figure II-16). Among white Alaskans, 1960 data show a median education level of 12.4.[79]

In levels of education achieved, then, it is the Natives (mostly Eskimos) of western and northern Alaska who are farthest behind. In those ten census districts, 1960 data show, of 9,113 nonwhites, 25 years and older, only 45 college graduates, only 303 high school graduates, only 787 eighth grade graduates, but 2,508 without any schooling.[80] Lowest of all districts, with a median school year completed of 1.6, was Wade-Hampton in the southwestern part of the state. There, the census reports show, of 984 adults, none ever attending college, only a dozen high school graduates (but another four having attended high school), and only two dozen who completed the eighth grade.[81]

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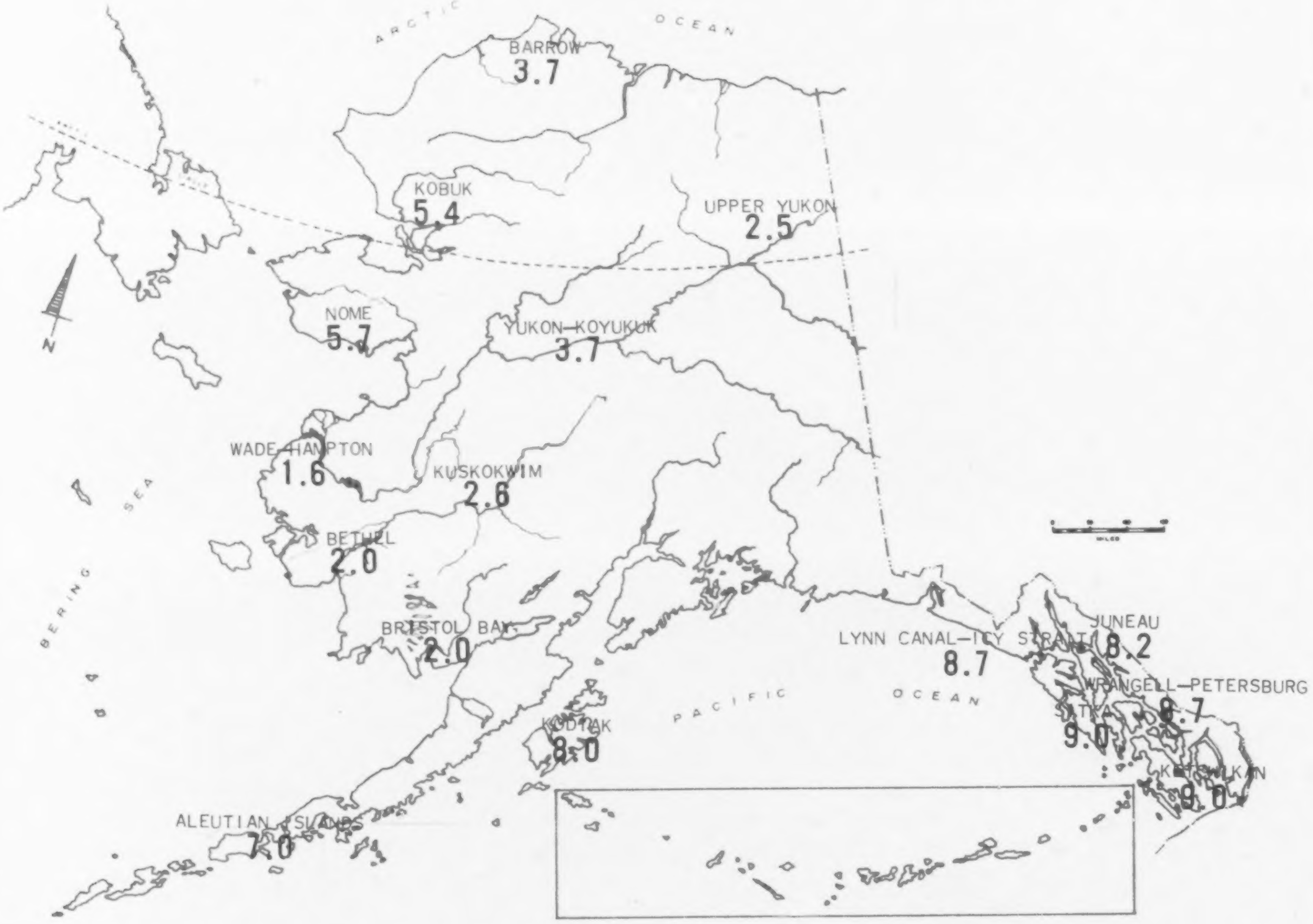
[78] [PC(1)3C] Census Table 47, p. 3-54.
[79] *Ibid.*
[80] Census Table 87, *op. cit.*, p. 3-104.
[81] *Ibid.*

FIGURE II-16

MEDIAN SCHOOL YEARS COMPLETED BY ALASKA NATIVES, SELECTED DISIRICTS, 1960


ARCTIC OCEAN
BARROW
3.7
KOBUK
5.4
UPPER YUKON
2.5
NOME
5.7
YUKON—KOYUKUK
3.7
WADE HAMPTON
1.6
KUSKOKWIM
2.6
BETHEL
2.0
BERING SEA
BRISTOL BAY
2.0
KODIAK
8.0
PACIFIC OCEAN
LYNN CANAL—ICY STRAIT
8.7
JUNEAU
8.2
WRANGELL—PETERSBURG
8.7
SITKA
9.0
KETCHIKAN
9.0
ALEUTIAN ISLANDS
7.0
N

Medians shown in districts with nonwhite population of 1,000 or more in which nonwhite population is virtually all Alaska Natives.

Source: U. S. Bureau of the Census, *U. S. Census of Population: 1960, Alaska General Social and Economic Characteristics, PC(1)-3C, Table 87.*

No newer data on a statewide basis exist, but 1968 data on one region has been carefully compiled.[82] This data, while it illustrates an apparent substantial gain in educational opportunity, suggest that gains for Natives *from* villages may not necessarily accrue *to* villages.

Of 2,240 Natives, 16 years old and over, interviewed in 1968 in 34 northern interior and coastal villages, about half have completed the sixth grade of school--two to three grades above the median found in these districts of persons 25 years and over, eight years earlier. But the substantial gain appears only because of the inclusion of the younger group. If they are set apart, the median level is between the third and fourth grade--about the same as it was in 1960.

The 511 older villagers (51 years or older) surveyed, not surprisingly have the least education; about half have a second grade education or less. Only nine are high school graduates or above. Of the 401 adults in the entire survey having no education, over half are in this group.

The 909 villagers surveyed who are in their thirties and forties have a median educational level of almost the fifth grade. Thirty-seven or about three percent have completed high school or beyond.

The 975 villagers surveyed who are 16-30 years old have the highest median--about grade nine. And many of the 16, 17, and even 18-year olds are still in village schools. Almost 25 percent--223 persons--have completed high school or better.

The much larger number (and percentage) of young people who have finished high school or who have completed the eighth grade and beyond testifies to educational gains being made by young Natives in villages. The lesser number (and percentage) of young people in the villages, once they have completed their schooling, however, testifies to the appeal of other places for the young. As an interior village spokesman observes: "Most Minto residents are middle age...with young adults moving away to take jobs or to continue their education."[83]

Immediate postgraduation plans of seniors at Mt. Edgecumbe (the largest single boarding high school attended by Alaska Natives) reveal little interest in returning to village life. Of 491 seniors graduating in three recent years (1963-1965) only 19 said they planned to return home--about four percent. Virtually all others (except for a few going immediately into military or naval service) said they planned to pursue further education or training.[84]

Follow-up reports made three years after graduation of two classes (1962 and 1963) portray a much larger percentage of graduates returning to villages than had expressed an intention to do so at the time of their graduation, but two-thirds had not returned even three years after graduation.[85] Educational and training opportunities for young people may increase, as they are, but the rise in median levels of education among village Alaskans generally should not be expected--in the absence of jobs or other income opportunities in villages--to match the increase.

Lacking formal education, Alaska's Natives over the years appear to have partly made up for it as job applicants by their ability to learn, and celebrated versatility at jobs opened to them in the wage economy that prospectors, whalers, and later, construction companies were bringing to their area.[86] Village men participating in the 1968 survey of northern interior and coastal villages told of holding 88 different occupations over the past ten years; most had been firefighters or laborers, but others had been riverboat pilots, laboratory technicians, barbers, and bakers. Village women told of holding 33 different occupations, the most important in numbers--arts and crafts. The number of these villagers who learned vocations in schools or through other training is small, but the number saying they possess job skills is large. Four out of five of them said they had no vocational training, but virtually all indicated abilities to do a wide range of work. Of some 1,500 villagers who gave responsive answers to questions, more than half want training and most of them would live away from home to obtain it.[87]

Interest among villagers across Alaska in obtaining further education and training is high, according to Bureau of Indian Affairs spokesmen. But inadequate funding for their vocational training programs, deficiencies in basic education among applicants, and too scarce facilities for training within Alaska are factors in denying opportunity to all who seek it.

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[82] This and the succeeding four paragraphs are drawn from U. S. Department of the Interior, Bureau of Indian Affairs, *Preliminary Findings, Demographic Survey of Fairbanks District, 1968*, Fairbanks, Alaska, 1968.

[83] "Minto to Decide Location Shortly," *Fairbanks News-Miner*, Fairbanks, Alaska, May 11, 1968.

[84] Reports of Plans of Seniors at Mt. Edgecumbe, 1963-1965, furnished by the Bureau of Indian Affairs, Juneau Area Office, Juneau, Alaska.

[85] Follow-up Reports of Graduates of Mt. Edgecumbe, furnished by the Bureau of Indian Affairs, Juneau Area Office, Juneau, Alaska.

[86] Margaret Lantis, "Acculturation and Health," Thomas Parran and the Alaska Health Survey Team, *Alaska's Health: A Survey Report*, The Graduate School of Public Health, University of Pittsburgh, 1954.

[87] U. S. Bureau of Indian Affairs, *Preliminary Findings, op. cit.*, pp. 6-9.

Basic to education and training is language, and, as noted earlier, English is the second language for most village Natives. Newest data from one region (the northern villages) shows one of twelve to require an interpreter for conversation in English, one of ten unable to read English, and one of eight unable to write English.[88] Two and three times as many others have only limited abilities. In southwestern Alaska, the proportion of people unable to speak, read, and write English is even higher. An interviewer in Hooper Bay, for example, reports (1966) nearly one-third of the adults either speak English poorly or not at all.[89]

Village Children

Most Native children attending schools in villages are in primary schools operated by the Bureau of Indian Affairs or by the State of Alaska. In about half of the schools, they are attending only with other Native youngsters.

Education of village children continues to be primarily a federal function. In the school year ending mid-1967 more than twice as many children were attending the 82 schools operated by the Bureau of Indian Affairs as were attending the 63 schools operated by the State of Alaska in predominantly Native places. And nearly five times as many were in federal schools as in the 21 schools operated by city or borough school districts (See Figure II-17).

Transfers of Bureau schools to the state on a region-by-region basis as agreed upon as a goal by the state and federal governments, continue to take place. In 1967 ten schools became the responsibility of the state, bringing the tal number transferred to 63.[90] Transfers are made as the state indicates a readiness to assume the financial obligations of school operation and as the schools meet state standards, or as the Bureau commits itself to raise a to-be transferred school to state standards. Takeover by the state occasionally meets resistance of villagers affected--chiefly because of a fear that other Bureau services may be reduced.[91]

Neither federal nor state operated schools in villages bar non-Natives from enrollment, of course. However, only Natives attended 28 of the 63 village schools operated by the state in 1966-67, and only Natives attended 46 of the 82 village schools operated by the Bureau.[92]

Of 178 Native communities of 25 or more, ten (all in the West) had no schools in 1966-67. Except for one community, these places had small populations (25-50 persons).[93] Children in these places either went to school at nearby villages or to Wrangell Institute, a Bureau-operated boarding school at Wrangell in southeastern Alaska.

No kindergartens are operated by the Bureau or the state, so the only five-year old Natives attending school are in independent school districts where the program is offered, or in villages having Head Start programs. Six-year olds in nearly all Bureau schools enter a beginners' class, so they are seven before they enter the first grade.

Educational opportunity ends at the eighth grade in nearly all villages, and in a few places ends at grades six or seven. Of 168 communities having schools, only 23 offer ninth grade work or above. These communities typically are larger places, but even large Eskimo cities like Kotzebue and Barrow offered (1966-67) no work beyond the ninth grade.

FIGURE II-17

NATIVE ENROLLMENTS IN SCHOOLS IN ALASKA, 1966-1967
NATIVE AND NON-NATIVE PLACES

	Number of Schools	Number of Children	Total
Predominantly Native Places			11,537
Bureau of Indian Affairs (excluding Wrangell and Mt. Edgecumbe)	82	6,207	
State of Alaska	63	2,904	
Independent School Districts	21	1,300	
Private or Denominational	7	538	
Predominantly Non-Native Places			6,530
TOTAL			18,067

Source: U. S. Bureau of Indian Affairs, Juneau Area Office, Juneau, Alaska; and State of Alaska Department of Education.

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[88] U.S. Bureau of Indian Affairs, *Preliminary Findings, op. cit.*, p. 6.

[89] U. S. Public Health Service, Division of Indian Health, *Hooper Bay Report of Physical Factors, Interests, Beliefs, and Attitudes*, Rehabilitation Project, Alaska Native Medical Center, Anchorage, Alaska, 1966, p. 9.

[90] U. S. Department of the Interior, Bureau of Indian Affairs, *The First Alaskans: 100 Years Later*, a progress report to the Commissioner of Indian Affairs, from the Area Director, Juneau Area Office, Juneau, Alaska, 1967, p. 8.

[91] "State Plans for Takeover of more BIA-Run Schools," *Fairbanks News-Miner*, May 10, 1968, p. 7.

[92] Summary remarks in this paragraph and the next four are, except as noted, drawn from data provided by the State of Alaska, Department of Education, the U. S. Bureau of Indian Affairs, and a letter from J. Lloyd Watkins, Deputy Assistant Area Director (Educational), Bureau of Indian Affairs, Juneau, Alaska, January 4, 1968.

[93] *Villages in Alaska and Other Places Having Native Population of 25 or More, op. cit.*

Village children going on to junior or senior high school go in the largest numbers from their villages to boarding schools operated by the Bureau of Indian Affairs in Alaska, Oregon, and Oklahoma. In 1966-67, 632 were enrolled at Mt. Edgecumbe at Sitka, Alaska, 490 at Chemawa, near Salem, Oregon, and 167 at Chilocco, Oklahoma. Bureau boarding schools are open only to Indians, Eskimos, and Aleuts. Another 314 village children attended high schools operated by religious groups. Another 152 attended the one regional high school operated by the state near Nome. Others--220 of them--attended urban schools under the state's boarding home program for high schoolers.[94]

The number of village children attending Bureau boarding schools for secondary education is increasing much faster than the population increase. The 1,595 attending grades nine through twelve in 1966-67 is up 804 from 1962-63.[95]

No full picture of the number of school-age village children not in primary schools is available. The Bureau of Indian Affairs reports that in 1967 over 95 percent of the children, ages six through eighteen in villages with Bureau schools (about half of the villages) were attending school.[96] A study conducted six years ago for the Bureau[97] indicated that less than 40 percent of the Native children in Bureau schools in 1955 had graduated from the eighth grade by 1962. This was twice the rate for non-Natives in Alaska. Dropouts responding to questionnaires cited as reasons for leaving, overcrowded conditions of schools, the need to help parents in hunting and trapping, marriage, the difficulty of school work, and the belief that they were too old. In fact, "three-fourths of the respondents were five or more years retarded in grade." Only five percent said they dropped because school was a waste of time. On the basis of questionnaires returned, the author concluded: "The attitude of dropouts toward education was excellent.[98]

No current picture of secondary school-age Native children not in school exists, but a 1962 study[99] showed only 34 percent of Native people aged fourteen to nineteen to be enrolled in secondary schools. Others had dropped out or were in lower grades. Factors contributing were reported to be unrealistic promotion and retention practices, excessive class size, lack of high school facilities, little relationship between school and life perceived by students, lack of understanding of Native cultural values by teachers, and health problems.

Those going on to graduate from high school are very much interested in obtaining further education, but dropouts appear to occur in post-high school training too. Of 118 seniors graduating in 1963, 17 said they planned to go to college and 81 said they planned further occupational or technical training. Follow-up of these graduates two years later, however, showed only 5 in college, and 36 more in training programs.[100]

But the number of Alaska Natives pursuing education beyond high school has grown enormously. "In twelve years" reports the Bureau of Indian Affairs in 1967, "the number of students continuing education beyond high school rose from 54 to more than 1,000."[101]

Educational programs for village children, as described by the director of an orientation program for Alaska Natives at the University of Alaska, are too little related to their cultural patterns:

> By the time the Native child reaches the age of seven, his cultural and language patterns have been set and his parents are required by law to send him to school. Until this time he is likely to speak only his own local dialect of Indian, Aleut or Eskimo, or if his parents have had some formal schooling he may speak a kind of halting English.
>
> He now enters a completely foreign setting--the western classroom situation. His teacher is likely to be a Caucasian, who knows little or nothing about his cultural background. He is taught to read the *Dick and Jane* series. Many things confuse him: Dick and Jane are two *gussuk* children who play together. Yet, he knows that boys and girls do not play together and do not share toys. They have a dog named Spot who comes indoors and does not work. They have a father who leaves for some mysterious place called "office" each day and never brings any food home with him. He drives a machine called an automobile on a hard covered road called a street which has a policeman on each corner. These policemen always smile, wear funny clothing and spend their time helping children to cross the street. Why do these children need this help? Dick and Jane's mother spends a lot of time in the kitchen cooking a strange food called "cookies" on a stove which has no flame in it.

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[94] U. S. Bureau of Indian Affairs, *op. cit.*

[95] Data furnished by the Bureau of Indian Affairs, Juneau Area Office, Juneau, Alaska.

[96] U. S. Bureau of Indian Affairs, *op. cit.*

[97] W. D. Overstreet, *A Study of Elementary School Dropouts Among the Native Population of Alaska for the Period 1955-1962*, Bureau of Indian Affairs, Juneau, Alaska, 1962, p. 50.

[98] *Ibid*, p. 53.

[99] Charles K. Ray, Joan Ryan, and Seymour Parker, *Alaska Native Secondary School Dropouts*, University of Alaska, 1962, pp. 350-356.

[100] Mt. Edgecumbe senior plans and follow-up reports furnished by the Bureau of Indian Affairs, Juneau Area Office, Juneau, Alaska.

[101] U. S. Bureau of Indian Affairs, *op. cit.*, p. 8.

....For the next 12 years the process goes on, The Native child continues to learn this new language which is of no earthly use to him at home and which seems completely unrelated to the world of sky, birds, snow, ice, and tundra which he sees around him.

In addition, the student is likely to lose his original language in the education process. His teachers do not speak his language nor do they encourage its use during school hours. In many schools students are absolutely forbidden to use the native language. Therefore, many native students come to feel that the language of their parents is undesirable and inferior.

Since the economy of the average native family in Alaska is marginal, at best, there are often strong pressures from the home for the child to leave school and help his family in its daily struggle for survival. The father needs his sons to help him hunt and fish; the mother needs her daughter to help at home with the children. So it is not surprising that 60 percent of native youngsters never reach the eighth grade.

By the time that the native student from a bush community reaches high school age it is necessary for him to leave his home and village to attend a boarding high school for four years. Here he lives in a dormitory with other Alaskan natives and his sole contact with western culture is through his teachers and text books. When he returns to his village each summer, he finds only vestiges of his formerly comfortable family relationship, and he encounters increasing frustrations because of the differences between himself and his village. His exposure to western education has taught him to respect (though not necessarily to understand) western standards, and at the same time it has decreased his respect for the native culture. He finds himself, figuratively, with a foot in each culture, unable fully to identify with either group and accepted by neither as well.

The male student finds that he is no longer of any use to his father as a hunter or a fisherman; he has lost his status as a male member of his village. The girl who returns often finds the sanitary conditions in the village hard to adjust to. She has lost many of the domestic skills she may have had: skinning animals, cooking, making clothing. Many of her peers are already married and have children. Her ability to speak English and her new way of dress and behavior set her apart from the other village girls who may think she has become "too good" for them. All of these high

> school students--with the exception of the 28 percent who have dropped out along the way--are in the process of becoming what the anthropologists term "marginal" people: They have been swept along by a system which is estranging them from their friends and relatives back home.
>
> For many of these students, high school graduation represents the point of no return. If they have come this far, it is unlikely that they will ever return to the village permanently. Unless they go farther, however, it is even more unlikely that they will be able to secure permanent jobs in the cities to which they migrate.[102]

While the quality of education available to village children continues to be questioned, the need for a good education is unquestioned among villagers, even among young people. As the valedictorian at Mountain Village, a southwestern Eskimo community of about 400 persons, put it recently in an address to the school's student body:

> More and more we find a greater and greater need for the English language and formal education. The main reason for this is that most other Americans, including the Government, knows just one language--English. So we have to learn the language to keep in touch with the rest of the world thru radio, newspapers, magazines, letters and movies.
>
> For our own generation a great deal of knowledge will be necessary. Not only do we need to think in two languages, but we will have to act in two languages also. It isn't good to believe all one hears. People often come to our village with ideas, plans, and promises. A responsible person must be able to see whether these are facts or exaggerations. We, and only we, should decide what is good for us and our community.
>
> Thus, our basic reason for being educated is the same today as it has always been--to have and make a better life for ourselves and our children.[103]

Importantly, the speaker added: "But we do not, and shall not, forget our past. We will not jump into the new ways so rapidly that we forget the old ways. To do so would be a sad thing."

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[102] Lee H. Salisbury, "Teaching English to Alaska Natives," in *Journal of American Indian Education*, Vol. 6, No. 2, January, 1967, pp. 5-6. It should be noted that the Dick and Jane readers referred to by Salisbury is being replaced by a culturally oriented series in a small number of schools beginning in the 1968-69 school year, and will be introduced in other village schools following evaluation. "Conventional School Books Out," *Fairbanks News-Miner*, August 22, 1968.

[103] "Valedictorian at Mountain Village Talks Change," *Tundra Times*, Fairbanks, Alaska, May 24, 1968, p. 1.

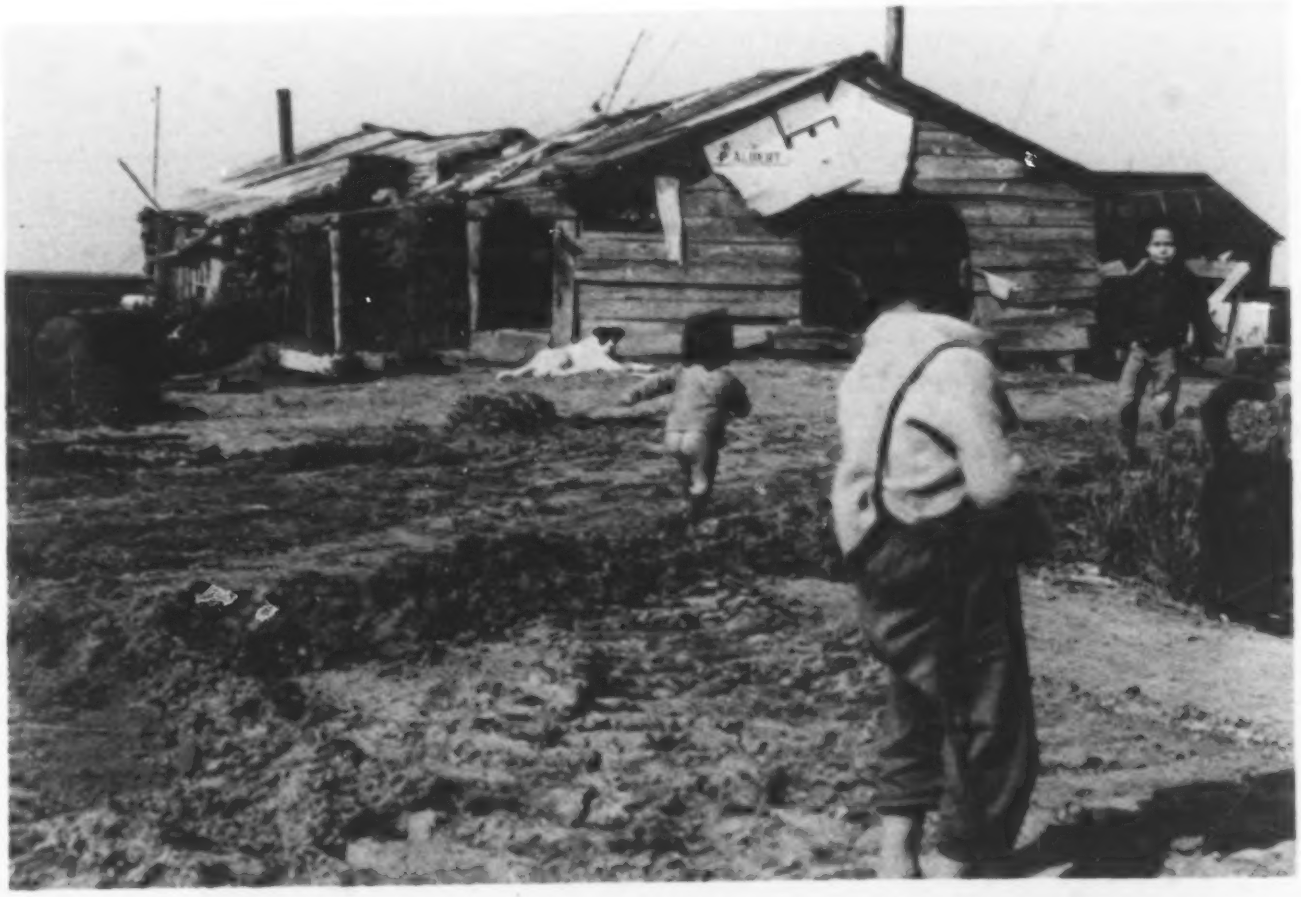
HOUSING AND RELATED FACILITIES

Housing

Native housing in Alaska's villages is generally considered to be the most primitive, dilapidated, and substandard of any occupied by Eskimos or Indians anywhere in the United States. Of some 7,500 dwellings, about 7,100 need replacement, according to the Bureau of Indian Affairs. And an additional 344 new dwellings are needed annually because of population increases.[104]

On a regional basis, housing conditions vary somewhat, as reported by the Bureau of Indian Affairs to a Congressional Committee in 1966, but the uniformity of their reports is more pronounced than their variety.

> Southeastern: Except in one village the housing situation is most deplorable. All but a few homes in each locale are dilapidated and substandard, and a severe shortage in most communities has forced many families to double up with relatives and friends....[105]



Children playing in front of their home in Bethel
Photo by U. S. Public Health Service

> Southcentral: Six communities of eighteen--including oil-rich Tyonek--have satisfactory dwellings. The rest of the places are very primitive...marginal...outright shacks...[106]
>
> Bristol Bay: Housing is the most pressing and serious problem for Natives in the remote villages. Generally speaking, housing is substandard. It is inadequate in terms of rooms, condition, and cleanliness.[107]
>
> Southwestern: In general, Natives live in one-room houses made of those materials which are typically available--driftwood, lumber, plywood, or logs... It is generally agreed that housing is grossly inadequate as to quality, as to space per occupant, and per family unit; that it is generally inadequate as to maintenance; and that the present housing in this district contributes to the incidence or spread of such diseases as tuberculosis. Poor and deteriorated construction of these houses cause scarce fuel supplies to become excessively costly, either in terms of labor or in terms of money. Cold and drafty homes may contribute to illnesses among Natives; and likewise, tightly sealed homes may be unhealthful for lack of fresh air.[108]
>
> Northwestern: It is believed that 95 percent of the homes in the area are substandard. Most houses are one-room frame construction without insulation and sanitation facilities. Usually the poor condition of the houses create health problems, especially in this area where the families are large.. In the treeless tundra, fuel problem is acute, and drafty, uninsulated houses are small...[109]

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[104] U. S. Department of the Interior, Bureau of Indian Affairs, *Program Memoranda, Alaska Natives*, Juneau Area Office, Juneau, Alaska, March, 1967, p. 83.

[105] Mamie L. Mizen, *Federal Facilities for Indians, Tribal Relations with the Federal Government*, U. S. Government Printing Office, Washington, D. C., 1966, p. 157.

[106] *Ibid.*, pp. 90-91.

[107] *Ibid.*, p. 81.

[108] *Ibid.*, p. 129.

[109] *Ibid.*, p. 161.

> Arctic Coast: Housing conditions north of the Brooks Range are extremely poor. Generally, the population must depend upon local materials which range from driftwood to sod-type construction. Some plywood is available to the coastal communities of Wainwright and Barrow via the *North Star* once a year. Materials other than locally available must all be flown in to Barter Island and Anaktuvuk Pass. This is obviously extremely expensive. Most houses consist of one or possibly two rooms. Barrow, particularly, has some examples of relatively better housing than the other three villages which are 100 percent substandard. The houses tend to be small, overcrowded, and poorly insulated.[110]
>
> Interior: Housing [south and west of Fairbanks] is generally adequate by bush standards, considering factors such as easy heating, windproofness, durability and safety. There is, however, general crowding within family units, and lack of individual home electrification. Homes occupied by well-employed heads of families are, of course, commonly more spacious and comfortable, whether constructed of log or frame lumber. Homes of underemployed families in outlying communities, such as Minto are usually self-constructed, one-room log cabins heated with a wood stove; all members of the family occupy the one room at the same time for all activities.[111] North and east of Fairbanks, by non-Native standards, 95 percent of the housing is grossly inadequate."[112]

These comments on Native housing do not, of course, apply to the housing of teachers or other governmental employees brought from other places to be employed in villages. Their government-owned housing is satisfactory and usually comfortable. Being attached to the school or other facility, or near it, their housing is segregated from Native housing, varying in degree from community to community.

The overcrowding which is characteristic of Native dwellings is emphasized in detailed house-to-house surveys conducted by the Division of Indian Health of the housing of Eskimos of western Alaska--the region where most Alaska villagers live (See Figure II-18). In southwestern Alaska, surveys of ten villages (1961-1963) show 348 homes containing 524 rooms, an average of 1.5 rooms per house. With a surveyed population of 1,978 persons, the average per room is 3.8 persons--a somewhat larger number of persons per room than exists for average households (3.5) across the United States. Among the ten villages the extent of overcrowding ranges from 2.3 persons per room in Tununak to 5.2 persons per room in Chevak.[113] In northwestern Alaska, surveys of twenty villages (in 1966) show 799 homes containing 1,570 rooms, an average of almost two rooms per house. With a surveyed population of 4,905, the average per room is 3.1 persons. Among the twenty villages, the extent of overcrowding ranges from 2.2 persons per room in Kotzebue to 6.5 persons per room in Noorvik.[114]

NUMBER OF

Source: U. S
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[110] *Ibid.*
[111] *Ibid.*
[112] *Ibid.*
[113] U. S
Natives, No
D. C., 1965
[114] U. S
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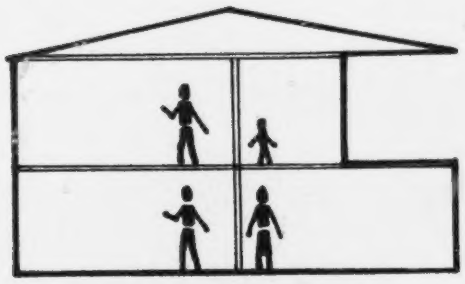
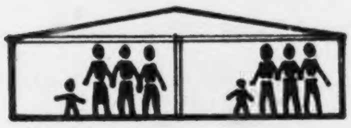
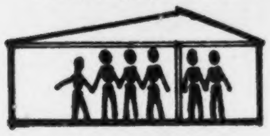
FIGURE II-18

NUMBER OF PERSONS PER ROOM, U. S. AND VILLAGES OF WESTERN ALASKA
1960, 1965, AND 1967 DATA

	Rooms per Household	Persons per Room
 United States	3 ½ Rooms	1
 Northwestern Alaska	2 Rooms	3 . 1
 Southwestern Alaska	1 ½ Rooms	3 . 8

Source: U. S. Bureau of the Census, *U. S. Census of Housing, 1960, Alaska,* Final Report HC(1)-3; U. S. Public Health Service, *Studies on Housing for Alaska Natives,* No. 99-AH-1, U. S. Government Printing Office, Washington, D. C., 1965; U. S. Public Health Service, "Dwellings and Environmental Sanitation Inspection Reports,""Alaska Native Health Area Office, Anchorage, Alaska, 1967.

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[110] *Ibid.*, p. 149

[111] *Ibid.*, p. 136.

[112] *Ibid.*, p. 145.

[113] U. S. Public Health Service, *Studies on Housing for Alaska Natives,* No. 99-AH-1, U. S. Government Printing Office, Washington, D. C., 1965, p. 9.

[114] U. S. Public Health Service, "Dwellings and Environmental Sanitation Inspection Reports," Office of Environmental Health, Alaska Native Health Area Office, Anchorage, Alaska, 1967.

In Nome, the largest city in western Alaska (population estimated at 2,450) overcrowding is also the typical situation, although the homes--many of which date to gold rush years--are somewhat larger than elsewhere in the West. In Nome, once a largely white community (of some 20,000 persons) but now about sixty percent Eskimo, 154 Native homes were surveyed in 1967 by sanitarians of the Division of Indian Health. They reported that "the homes of Nome are in an advanced state of deterioration due to the lack of upkeep and their age. Ninety-eight percent of these homes are of frame construction with the average of 3.19 rooms per home. The floor area for these homes is approximately 566 square feet per home, and the average floor area per occupant is 100 square feet. The average person per room is 1.76."[115]

The director of the U. S. Office of Economic Opportunity after visiting Nome in 1967 described its housing: "most of the houses are ramshackle, falling-down places. But even this city has a slum that is worse than the rest of the town where 500 Natives live in the most abject poverty that I've seen anywhere--including Africa, Latin America, India, or anywhere else."[116]

While the low cash income of villagers is an important reason behind substandard dwellings in village Alaska, it is not the sole explanation. Federal programs of insured loans are not available, even to those with ability to repay, if they do not possess title to the land upon which a house is to be situated, and most Alaska villagers are landless. Nor are these or most other federal housing programs available to those without water and sewer systems, and most villagers are without these facilities. Minimum size and construction standards imposed by federal housing programs are inappropriate to villages, and private loans are too seldom available to remote villagers.[117]

Community power does not exist in most villages of Alaska, and most homes have no electricity--even from private power plants. Electrification of 67 villages, however, is the objective of a recently funded program for remote areas of Alaska.[118]

Inroads being made on the housing problem are very slight. Mutual help housing projects (of 15 houses each) are being carried on in the villages of Hoonah and Metlakatla. Under the loan program of the Farmers Home Administration, seventy heads of households in Barrow and three in Kotzebue are purchasing homes. With its modest ($171,000) allotment for housing assistance in 1968 in Alaska, the Bureau of Indian Affairs is providing materials to rehabilitate or rebuild 67 dwellings in Anaktuvuk Pass, Lower Kalskag, and Bethel. Bureau sawmills are on loan at Noorvik, Shageluk, Elim, and Minto to assist in meeting housing material needs. But over 150 villages are unassisted in any way.[119]

Additional families will be assisted in obtaining decent housing in the coming year if appropriations are made by the Congress to fund a special self-help grant and loan program authorized in 1966 for housing in remote areas of Alaska.[120] Funding of $1 million (the amount contained in the 1969 budget) would permit construction of about 133 houses at an average cost of $7,500 each. Improved housing also is promised in the 1968 construction of a housing components fabrication plant in western Alaska at Bethel (with a grant from the Economic Development Administration) and purchase of up to 300 housing units (for resale) over the next three years by the Department of Housing and Urban Development.[121]

Present and anticipated programs fall far short of meeting needs. Following a 1966 visit to the Yukon-Kuskokwim Delta area of southwestern Alaska, the then Commissioner of the Public Housing Administration said of the housing of the area: "I've never seen anything like it, even in the worst slums in our major cities." And she added, "In the lower 48 we are trying to get rid of our privies. In Alaska we feel it would be a great advance just to have privies."[122]

Water Supply and Waste Disposal

In most villages water supply and waste disposal practices are primitive and unsanitary, and have important ill consequences for Native health.

In the earlier mentioned twenty surveyed villages of northwestern Alaska, for instance, 725 households draw upon unsatisfactory surface sources for their water; only 74 draw water from wells. In the 799 households there are only 19 flush toilets, and all of these but one are in a single village. More than half of the households use pots or pails indoors for human waste, and deposit the waste later on the ground or sea ice. About one-fourth of the households have privies, but half of these are unsatisfactory from a sanitation standpoint.[123]

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[115] U. S. Public Health Service, *Comprehensive Environmental Health Study Report of Nome, Alaska,* Kotzebue Service Unit, Alaska Native Health Area Office, Anchorage, Alaska, July, 1967, p. 5.

[116] Sargent Shriver, Director, Office of Economic Opportunity, quoted by John Shuler, "VISTA, Alaska," Anchorage, Alaska, February, 1968, p. 1.

[117] Alaska Native Housing Committee, *A Housing Program for Alaska's Remote Areas,* Juneau, Alaska, March 6, 1966.

[118] "Alaska Villages to get Electric Power," news release from the Office of Economic Opportunity, Washington, D. C., February 15, 1968.

[119] Information supplied by Jacques Norvell, Area Housing Officer, Bureau of Indian Affairs, Juneau, Alaska.

[120] P. L. 89-754.

[121] Federal Field Committee for Development Planning in Alaska, Bethel Housing Project, Federal Field Committee Newsletter No. 2, June 21, 1968.

[122] Remarks of Marie McGuire, cited in "Alaska Eskimo: The Poorest American," by Homer Bigart, *The New York Times,* July 31, 1966.

[123] U. S. Public Health Service, "Dwellings and Environmental Sanitation Inspection Reports," *op. cit.*

As the Bureau of Indian Affairs comments on the area: "water for domestic purposes in most villages is obtained from rivers and creeks near the villages. The water is hauled in buckets to oil drums in the homes...Ice is melted in winter for water, even in some BIA schools...Adequate sanitation facilities are lacking in every village [of 28] except Unalakleet and Nome."[124]

But even in Nome the high cost of sewer and water-system connections results in but few Native families having either. Only three Native households (of 154 surveyed) use city water; none has connected to sewer. Nearly all Native families in Nome purchase water from a vendor or go to a spring three miles from town to obtain it. All Native homes have an essentially identical type of toilet facility, and human waste disposal practice: box and pail toilets in the home and final disposal on the beach of Norton Sound.[125]

In southwestern Alaska's nine earlier-mentioned surveyed villages only 6 percent of 348 households draw upon wells for water, and another 22 percent draw upon springs; the remainder depend upon lakes and rivers. There are no flush toilets in these villages; only 42 households have privies; the remaining 306 households use indoor pails.[126]

A 1968 survey of 35 northern coastal and interior villages shows two of three households hauling ice or water for their water supply. Of the nearly 900 responding households, 41 report modern toilets; the remainder use privies or box and pails for human waste. Only 56 families report a bathtub inside.[127]

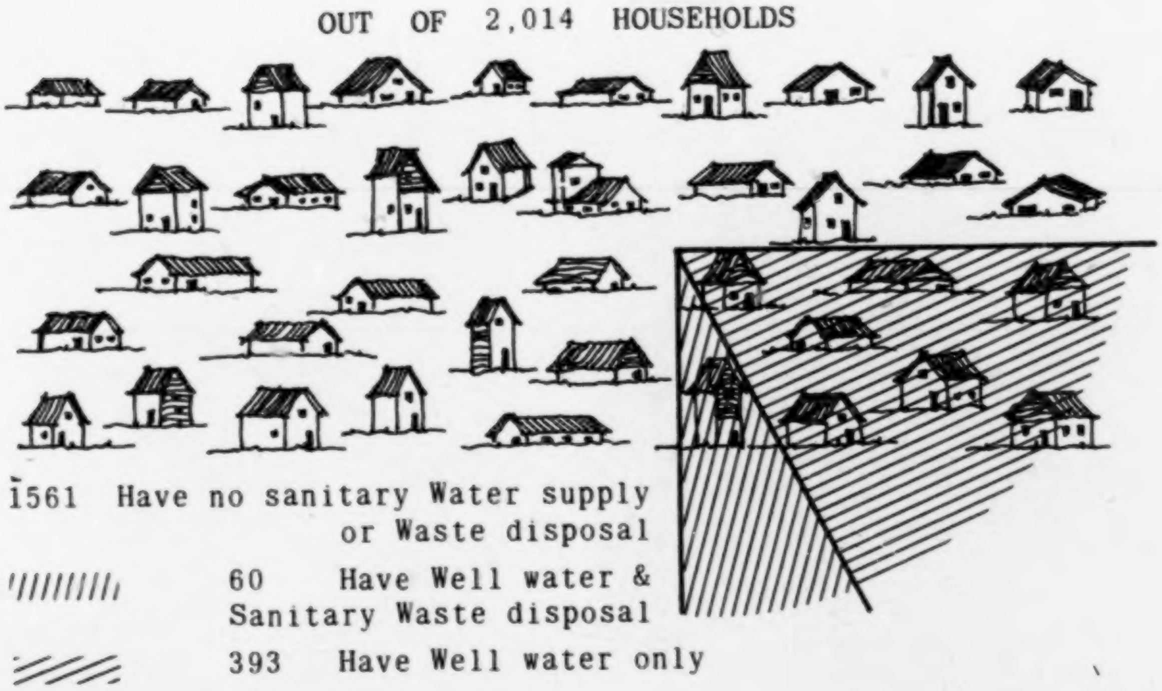
Results of these three surveys are portrayed in Figure II-19.

There are further problems of village sanitation: "Spring flooding, which inundates many river villages, washes the contents of latrines and refuse dumps throughout the village, polluting water wells. Pits fill with surface water and become breeding places for flies and mosquitoes." And, "until sanitation facilities are at the minimally acceptable level, the incidence of gastroenteric diseases and hepatitis will persist, with the potential for serious epidemics..."[128]

This picture of primitive water supply and waste disposal practices is generally characteristic of village Alaska, with the exception of 37 villages that have had sanitation facilities constructed since 1961 under provisions of the Indian Sanitation Act. Under this law (P.L. 86-121) the Division of Indian Health provides the engineering, materials, equipment, and supervision to provide water supply and waste disposal facilities, and the Natives of the village provide the labor to the extent of their ability to do so.

FIGURE II-19

WATER SUPPLY AND WASTE DISPOSAL IN 2,014 NATIVE HOUSEHOLDS
1960, 1966, AND 1968 DATA



Source: U. S. Bureau of Indian Affairs, *Preliminary Findings, Demographic Survey of Fairbanks District, 1968*, Fairbanks, Alaska; U. S. Public Health Service, *Studies on Housing for Alaska Natives*, No. 99-AH-1, U. S. Government Printing Office, Washington, D. C., 1965; U. S. Public Health Service, "Dwellings and Environmental Sanitation Inspection Reports," Alaska Native Health Area Office, Anchorage, Alaska, 1967.

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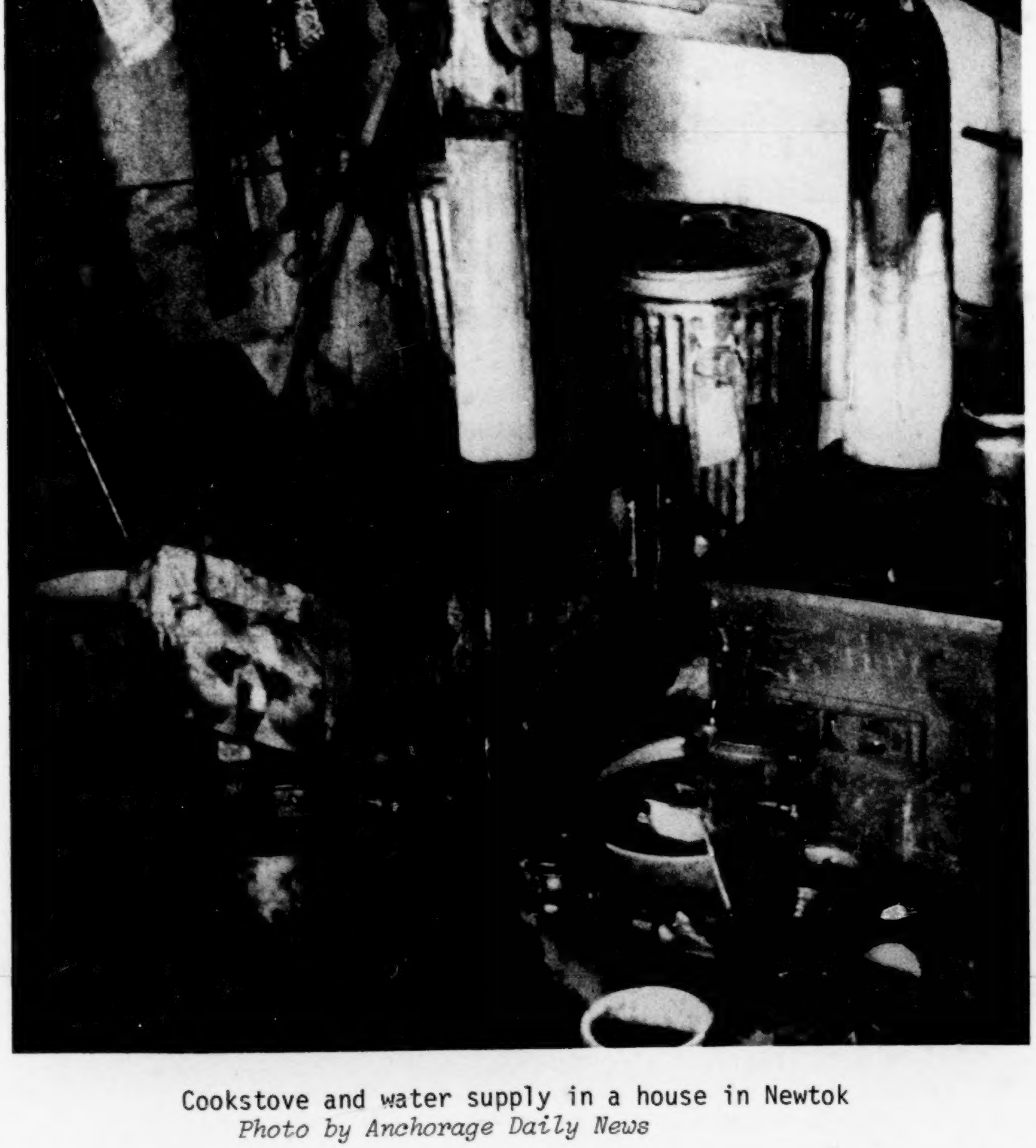
[124] Mizen, *op. cit.*, p. 162.

[125] U. S. Public Health Service, "Dwellings and Environment" *op. cit.*

[126] U. S. Public Health Service, *Studies on Housing for Alaska Natives, op. cit.*

[127] U. S. Bureau of Indian Affairs, *Preliminary Findings, op. cit.*

[128] Mizen, *op. cit.*, p. 132.



Cookstove and water supply in a house in Newtok
Photo by Anchorage Daily News

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Of the 37 projects completed, the largest number (22) have been "communal water and individual waste" projects. Facilities installed are typically like these in Napaskiak in southeastern Alaska:

> The individual facilities consist of a pit privy, sink, seepage pit, garbage can, water storage cans and water-carrying cans for each household.
>
> The community facilities include a fenced community refuse disposal area behind the village and a community watering point located within the village. The watering point facilities include a well, wellhouse, and water treatment and storage tank.[129]

A village well for common use and a privy (or pots and pails) for each household may seem primitive, but as the Alaska director of the program points out, it is consistent with the principles of sanitation and a vast improvement over existing practices.[130]

The fifteen other villages have had water made available in the homes, either through drilling individual wells or by being piped from a community well. All but one of the water distribution systems are in southcentral or southeastern Alaska--areas free of permafrost. Six of these places have sewer systems; the others have individual waste projects.

Total funds available for fiscal years 1961-1968 have totaled $4.54 million.[131] At this rate of funding it will require twenty more years to make clean water available to all villagers and enable them to dispose of human waste in reasonably sanitary ways.[132]

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[129] U. S. Public Health Service, *Final Report, Alaska's Native Sanitation Facilities for Napaskiak*, Alaska Native Health Area Office, Anchorage, Alaska, June, 1965.

[130] K. C. Lauster, "Water Supply and Waste Disposal in Alaska Native Communities," Alaska Native Health Area Office, Anchorage, Alaska, November 1, 1966.

[131] U. S. Public Health Service, "Status of Sanitation Facilities Construction Projects, 1961-1968," Alaska Native Health Area Office, Anchorage, Alaska, 1968.

[132] U. S. Public Health Service, *Operating Plan, Fiscal Year 1968, Anchorage Area*, Alaska Native Health Area Office, Anchorage, Alaska, September 30, 1967, p. 1.

HEALTH STATUS

It is conditions of life in village Alaska, not physical inheritance, that account for the poor health status of Alaska Natives.

Principal Health Problems

"What is central to most health problems of villagers," says the medical director of the Alaska Native Medical Center, "is the inadequacy of the space which human beings have for breathing, for living."[133] Dark and poorly ventilated dwellings are the environment in which germs thrive; small and overcrowded, these dwellings are the setting for widespread infection and crippling illness--especially respiratory infections--in humans.

And respiratory infections are a leading cause of sickness, hospitalization, and death among Alaska Natives:

- --the principal cause of death in 1966 among Native infants--who have a mortality rate twice that of white Alaskans--was pneumonia;[134]
- --the incidence rate (in 1963) of newly reported active cases of tuberculosis was still nearly twenty times the rate for the United States as a whole;[135]
- --the leading cause of hospitalization among Native children in 1966 was respiratory diseases;[136]
- --among all Alaska Natives, influenza and pneumonia in 1966 ranked second only to accidents as a cause of death; the rate: ten times the rate of Alaska whites;[137]
- --broncho pneumonia was the leading cause of hospitalization among Alaska Natives in 1966;[138] and
- --bronchiectasis--a severe (nontubercular) lung disease--occurs with excessive frequency in Alaska Native children.[139]

The high incidence of tuberculosis, it should be noted, has been driven downward by public health programs in recent years. Testimoney of the reduction may be seen in results of successive surveys of tuberculin sensitivity in the Yukon-Kuskokwim Delta. In 1949-1951, eighty percent of the children had been infected by the age of four with tuberculosis; in 1963-1964, less than one percent had been infected by the age of four.[140]

Respiratory diseases also contribute to other health problems--some of which are disabling, such as chronic otitis media, an infection of the middle ear which often results in total deafness.

In 1967 otitis media was the leading notifiable disease among Alaska Natives and the third ranked (1966) cause of hospitalization.[141] Most of the afflicted are children; the disease is established generally by the time a child is two. The infection is very common in children generally, but not as a chronic condition as it is among Native children. It becomes chronic, and thereby crippling, much of the time through failure to obtain prompt medical care.[142]

Ten to fifteen percent of the Native children in villages have chronic otitis media, according to the chief pediatrician of the Alaska Native Medical Center, and they will suffer a significant hearing loss as a consequence. Communication difficulties--often numerous for Alaska's villagers who hear well, are, needless to say, increased for those who hear poorly.

While acute upper respiratory infections are the principal predisposing factor to otitis media, iron deficiencies in diets contribute to the susceptibility of children.

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[133] Interview with Martha Wilson, M.D., Medical Director, Alaska Native Medical Center, Anchorage, Alaska, June 14, 1968.

[134] *Supra,* p. 17.

[135] M. L. Hanson, G. W. Comstock, C. E. Haley, Isoniazid Prophylaxis Program in an Underdeveloped Area of Alaska," *Public Health Reports,* Vol. 82, No. 12, December, 1967, p. 1045.

[136] *Supra,* p. 20.

[137] *Supra,* p. 15.

[138] *Supra,* p. 18.

[139] J. K. Fleshman, J. F. Wilson, and J. J. Cohen, "Bronchiectasis in Alaska Native Children," a paper presented to the 1967 Symposium on Circumpolar Health Related Problems, Fairbanks, Alaska.

[140] Hanson, Comstock, and Haley, *op. cit.,* p. 1049.

[141] *Supra,* p. 18 and p. 21.

[142] This paragraph and the two succeeding paragraphs are based on an interview with J. Kenneth Fleshman, M.D., Chief of Pediatrics, Alaska Native Medical Center, Anchorage, Alaska, June 14, 1968.

As the dark, underventilated, and crowded houses provide the setting for dissemination of respiratory infections in villages, a related environmental factor is behind the high incidence of gastroenteritis--fourth in rank as a cause of hospitalization among Native children and adults.[143] This factor: absence of proper sewage disposal facilities--a characteristic of most villages in Alaska.

Virtually all gastroenteritis in villages is diarrhea caused by bacteria in foods and water. For most adults, diarrhea means discomfort and inconvenience, but for infants and small children, owing to the loss of body fluids, it may leave a child prey to other illnesses, or it may result in death.[144]

Infectious diarrhea is the leading problem in the region having the greatest health problems of any in Alaska--the Bethel area, the southwestern Alaska home of nearly one-third of Alaska's villagers.[145]

A contributing factor to gastroenteritis, and to other infectious diseases is the absence of attention to good health practices such as keeping food and utensils free of bacteria and hands clean. The underlying cause, however, of infective and parasitic diseases is plain: unsanitary conditions, unsafe and inadequate water supply, crowded housing, and poor methods of waste disposal.

Accidents, Alcohol, and Mental Health

Accidents--the leading cause of death among Alaska Natives in 1966--"are common in a country where climate and hardships in making a living are so severe," observes the Division of Indian Health. "In the summer months when subsistence fishing and hunting is carried out, boating mishaps, drownings, and falls inevitably occur. In the winter months injuries from burns, firearms, frostbites, and dog bites are more common. Overcrowded conditions in wooden makeshift houses with unsafe heating and cooking equipment contribute to the high injury rates."[146]

And the Division also observes: "Assaults and injuries resulting from excessive use of alcohol are all too common."[147] Little statistical material exists on problems arising from consumption of alcoholic beverages, but the problems are many and the consequences often tragic.

Alcohol problems among Natives, the subject of a banner story in the state's Eskimo-edited newspaper, the *Tundra Times*, are told by a former villager:

> This big problem of alcoholism is out of control in our new state already. It's not only here, it's all over in our small villages as well. They order liquor by cases in the villages. Our jails and children homes are over-flowing because of alcohol. Parents are separated because of this same matter. White men are

> taking advantage of our Native women, young and old, just because they are divorced and are not employed.... An Eskimo can work if given a chance but his greatest enemy is alcohol. Indians down-fall, Aleuts' enemy, also white man's. First it will be called a sociable drink. Nothing wrong with it they say. But sociable drink gets hold of you. You can't live without it anymore. Finally you lose your job, your home, your family.[148]

Problems of mental health are also little described in numbers, but appear to be widespread. As noted earlier, personality disorders ranked third in incidence per 1,000 Native adults as a cause of hospitalization in 1966. Suicides and deaths attributed to alcoholism are rising in incidence. And, if mental health is construed to include all behavior problems, it is, in the opinion of the chief psychiatrist of the Division of Indian Health in Alaska, the major health problem among Natives today.[149]

From statements in operating plans of Division of Indian Health hospitals in western Alaska, come professional judgments regarding the Division's classification of "mental, psychoneurotic, and personality disorders":

> Kanakanak: 2.5 percent of admissions (25) were related to mental and psychoneurotic disorders. No mortality was noted in this category. 20 percent (5) of the admissions were related directly to alcohol. This problem is expected to increase as predicted in past program plans. Underlying factors such as cultural upheaval, socio-economic instability, and changing moral values contribute to the psychological problems.[150]

[illegible] *Supra*, p. 18 and p.20.

[illegible] Fleshman, *op. cit.*

[145] U. S. Public Health Service, *Operating Plan, Fiscal Year 1968, Bethel Service Unit*, Alaska Native Health Area Office, September 30, 1967, p. 1.

[146] U. S. Public Health Service, *Operating Plan, Fiscal Year 1968, Anchorage Area*, Alaska Native Health Area Office, September 3, 1967, p. 55.

[147] *Ibid.*

[148] "Tragedies Due to Alcoholism Related by Eskimo Woman," *Tundra Times*, Fairbanks, Alaska, March 8, 1968, pp.1-2.

[149] *Supra*, p. 21.

[150] U. S. Public Health Service, *Operating Plan: Fiscal Year 1968, Kanakanak Service Unit*, Alaska Native Health Area Office, September 30, 1967, p. 20.

> Barrow: There are several individuals in Barrow with schizophrenic-like disorders that require frequent attention. There have been several suicides and suicide attempts within the past two years.[151]

> Kotzebue: The tremendous transition, both culturally and economically, that the Native population has been going through in recent years has led to many psychoneurotic, character and behavior disorders which now constitute one of the great health problems in our service unit.[152]

> Bethel: Psychiatric problems rank low in discharge diagnosis and inpatient days, yet relatively high among outpatient visits. Most acute psychotic problems are transferred immediately to Alaska Psychiatric Institute (API), and therefore reflect few inpatient days at Bethel. Chronic, low-grade psychoneuroses are usually treated in the villages where the family and cultural setting help to maintain reality. And finally, the bulk of outpatient visits are for alcoholic intoxication, and these seldom require hospitalization. Many of the accidents and injuries that we see each year are associated with alcoholic excess...The mental health of a people in transition is predictably poor,and this area is no exception.[153]

Diet and Health

Deficiencies in diets are significant factors in sickness of Alaska Natives.

Plainest relationship reported between diet and health: iron deficiency and the high incidence of respiratory disease in children, as reported by physician and nurse investigators who studied children of six villages on Kodiak Island in 1966. Anemic children (three years and under) had a much higher frequency of illness than children not anemic, and three of four of their illnesses were respiratory.[154]

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[151] U. S. Public Health Service, *Operating Plan: Fiscal Year 1968, Barrow Service Unit,* Alaska Native Health Area Office, September 30, 1967, p. 20.

[152] U. S. Public Health Service, *Operating Plan: Fiscal Year 1968, Kotzebue Service Unit,* Alaska Native Health Area Office, September 30, 1967. p. 20.

[153] U. S. Public Health Service, *Operating Plan: Fiscal Year 1968, Bethel Service Unit,* Alaska Native Health Area Office, September 30, 1967. p. 20.

[154] Carolyn V. Brown, George W. Brown, and Beryl Bonehill, "Relationship of Anemia to Infectious Illnesses on Kodiak Island," in *Alaska Medicine* , September, 1967, pp. 93-95.

"General malnutrition," the Division of Indian Health points out, "is an underlying cause or a contributing factor to many illnesses. It undoubtedly increases susceptibility to infections and reduces the capacity to recover." The Division adds that malnutrition "is under-reported as a concurrent condition with other diseases."[155]

The most outstanding characteristic of diets examined by dietary researchers in eleven villages (1956-1961), "was the wide range in the mean daily intakes of all the major nutrients--from extremely low to extremely high--a clear indication that family and village food supplies fluctuate enormously throughout the year." They found that at no age level was the mean daily calorie intake equal to that recommended by the National Research Council (see Figure II-20). Of the diets examined, 75 percent or more were low

FIGURE II-20

CALORIC INTAKES OF ALASKAN ESKIMO AND INDIAN DIETS: ALL AREAS AND VILLAGES, ALL SEASONS, BY AGE AND SEX

		Caloric Intakes		
Age Sex Category	Number of Records	Mean Daily Intake	Intake Range	Percent Under N. R. C.*
Adult male 20-60 yrs.	746	2649	1006-5740	73.2
Adult male 60 + yrs.	112	2258	893-3820	71.4
Adult female 20-60 yrs.	633	2185	930-4503	60.4
Adult female 60 + yrs.	120	1681	739-3381	65.3
Adult female Pregnant	121	2196	1093-4300	73.6
Adult female Lactating	193	2443	1197-5263	83.8
Male 13-19 yrs.	303	2386	1174-4161	87.0
Female 13-19 yrs.	298	1992	893-3820	81.1
School child 7-12 yrs.	916	1966	737-4174	72.7
Preschool 2-6 yrs.	843	1543	529-3262	53.0

* National Research Council. Food and Nutrition Board. Recommended dietary allowances, 1958, publ. 589. Washington, 1958, 36 p.

Source: Christine A. Heller, Ph.D. and Edward M. Scott, Ph.D., *The Alaska Dietary Survey 1956-1961*. U. S. Department of Health, Education, and Welfare, Public Health Service, Nutrition and Metabolic Disease Section, Arctic Health Research Center, Anchorage, Alaska, p. 32.

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[155] U. S. Public Health Service, *Operating Plan: Fiscal Year 1968, Anchorage Area,* Alaska Native Area Health Office, September 30, 1967, p. 15.

in calories and in calcium and ascorbic acid; one-third were low in Vitamin A and thiamine; one-fourth were low in riboflavin. At some age levels there were protein deficiencies, but protein intakes were generally high. Mean daily niacin intakes were high for all age groups and relatively few diets showed deficiencies of this nutrient.[156] Consumption of several of these nutrients by villagers studied on a per-person, per-day basis is compared with Americans having a per capita income of $1250 a year in Figure II-21.

FIGURE II-21

COMPARISON: ESTIMATED DAILY CONSUMPTION
OF SELECTED NUTRIENTS USDA*
AND ALASKAN ESKIMOS AND INDIANS
PER PERSON PER DAY

Nutrients	Estimated Daily Consumption USDA Per Person Annual Income $1250	 Alaskan Eskimos and Indians**
Calories	3200	1999
Protein (gms)	103	140
Calcium (gms)	1.15	0.6
Thiamine (mgs)	1.56	1.57
Vitamin A (I.U.)	8540	5766
Ascorbic Acid (mgs)	106	35

* U.S. Department of Agriculture. Food: Yearbook of Agriculture 1959. Washington, 1959. 736 p.

** 4567 Diet Records of 3 to 7 days each.

Source: Christine A. Heller, Ph.D. and Edward M. Scott, Ph.D., *The Alaska Dietary Survey 1956-1961.* U. S. Department of Health, Education, and Welfare, Public Health Service, Nutrition and Metabolic Disease Section, Arctic Health Research Center, Anchorage, Alaska, p. 129.

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Formula feeding of infants was found by these investigators to be common practice once the infants were two months of age. Analysis of their diets showed "a significant proportion...inadequate in calories, iron, thiamine, niacin, and ascorbic acid..."[157] Or, as the Division of Indian Health put it: "It is evident that a large portion--perhaps most--of the Native infants and young children are not receiving an adequate diet. The extremely common occurrence of iron deficiency anemia plus the high rate of serious infection of infants and young children attests to this fact."[158]

Behind the Health Problems: A Summary View

At the root of the health problem of Natives and American Indians generally, in the opinion of the medical spokesman for the Association on American Indian Affairs, is plainly the inability to achieve prosperity. But even more basic, he says, "are the social and ecologic disruptions which no longer permit a life of relatively healthy poverty."[159]

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[156] Heller and Scott, *op. cit.*, p. 165.

[157] *Ibid.*, p. 167

[158] U. S. Public Health Service, *op. cit.*, p. 6.

[159] Carl Muschenheim, "The National Significance of Indian Health," speech delivered before the Fourth National Conference on Indian Health, November 30, 1966.

THE FUTURE OF VILLAGES AND GOVERNMENTAL POLICY

To some informed observers outside of village Alaska, the continued existence of so many scattered, remote--and usually poor--villages doesn't make sense. These observers may be troubled because so few Native communities apparently have resources that can be transformed into employment and income. They may be dismayed at the high cost of providing governmental services to villagers, or the difficulty of making such services adequate to meet their needs. Or they may feel unsettled, or even embarrassed, at the persistence of a style of life they see as primitive here in the complex and sophisticated world of the mid-twentieth century.

But informed observers, whatever their judgments about what might make sense from their point of view, forecast no early disappearance of the state's many villages. They anticipate that expanding educational and training programs for young people will result in some continued migration to Alaska's cities and to other states. And they expect development of job opportunities in village Alaska, and the establishment of regional educational or health facilities will bring migration from less satisfactory places to villages where these attractions exist. The number of villages, as they see the future, will slowly decline, but village Alaska--in somewhat changing form--will persist.

Village Alaska will persist because of circumstance and choice. What this means is suggested in the remarks (relating to American Indians generally) of an Indian Association spokesman:

> I am never surprised, but always dismayed, when well-meaning but poorly informed people ask why do not the Indians integrate themselves more effectively into the general society....To reply simply that probably they'd rather not, or, contrariwise, that they do not have the opportunity to integrate, would not, either way, properly answer the question. Nor would it be very informative to reply that for the most part they do not have the opportunity and that, in any case, they have strong attachment to their own cultural heritage and are understandably ambivalent in their reactions to the alien society which has engulfed them. This is, it seems to me, a reasonable statement of the case, but it is quite meaningless to anyone who is unfamiliar with the values on the one side of the equation, namely the character and quality of the cultural heritage to which Indians are attached.[160]

While some characteristics of Alaska's villages and villagers can be portrayed with reasonable accuracy, an enormous range of other characteristics--such as the impulses and desires found in great variety in individuals everywhere--can only be noted, not quantified nor clearly described. This fact, and the expected continued existence of village Alaska, the likely migration of some villagers in response to opportunity, and the cultural heritage of Natives, have plain implications for government policy and programs.

The future of villages will be very much affected--as their past has been affected--by government. Recognition of broad consequences of decision making is plainly imperative. And government decision makers must not presume that the life they've known is the only meaningful existence; they must understand the meaningfulness of the character and quality of Eskimo, Indian, and Aleut life patterns. And finally, not knowing the form and substance village Alaskans want their future to take, government must pursue a policy in which the beneficiaries of its programs are actively its shapers.

Important for programs generally, these implications are of especial significance to Congressional resolution of Native claims to land.

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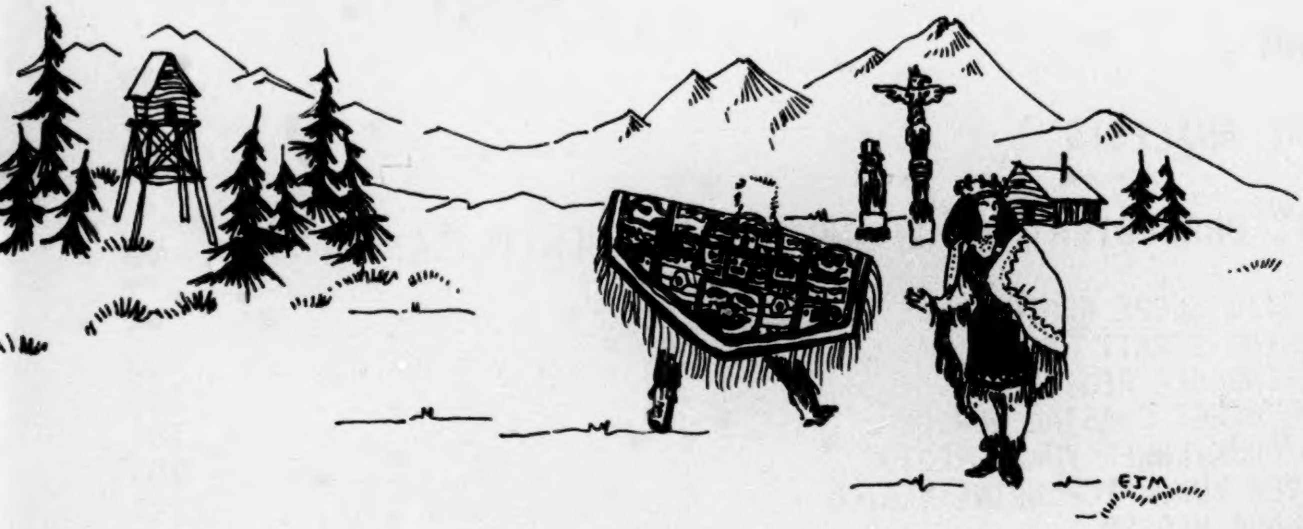
[160] *Ibid.*

LAND & ETHNIC RELATI

CHAPTER III

NIC RELATIONSHIPS



David M. Hickok

CHAPTER III

TABLE OF CONTENTS

INTRODUCTION 87

THE LAND 89

REGIONAL ANALYSIS 99

REGIONAL CHARACTERIZATION AND ETHNIC IDENTIFICATION . . . 99

- ARCTIC SLOPE REGION 99
- BERING STRAIT REGION 100
- BERING SEA REGION 103
- SOUTHWEST COASTAL REGION 107
- KOYUKUK-LOWER YUKON REGION 108
- UPPER YUKON-PORCUPINE REGION 111
- TANANA REGION 112
- UPPER KUSKOKWIM REGION 115
- BRISTOL BAY REGION 116
- ALEUTIAN REGION 119
- KODIAK REGION 120
- COOK INLET REGION 120
- COPPER RIVER REGION 123
- GULF OF ALASKA REGION 124
- SOUTHEAST REGION 127

REGIONAL

- ARCTI
- BERING
- BERIN
- SOUTH
- KOYUK
- UPPER
- TANANA
- UPPER
- BRIST
- ALEUT
- KODIA
- COOK
- COPPE
- GULF
- SOUTH

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text, however, are those of the staff of the Federal Field Committee and do not necessarily

APTER III

E OF CONTENTS

87
89
99
99
99
100
103
107
108
111
112
115
116
119
120
120
123
124
127

REGIONAL OCCUPATION AND LIVELIHOOD PATTERNS 129

ARCTIC SLOPE REGION 129
BERING STRAIT REGION 144
BERING SEA REGION 170
SOUTHWEST COASTAL REGION 178
KOYUKUK-LOWER YUKON REGION 195
UPPER YUKON-PORCUPINE REGION 205
TANANA REGION 212
UPPER KUSKOKWIM REGION 216
BRISTOL BAY REGION 222
ALEUTIAN REGION 236
KODIAK REGION 247
COOK INLET REGION 252
COPPER RIVER REGION 260
GULF OF ALASKA REGION 264
SOUTHEAST REGION 272

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LAND & ETHNIC RELA

The Alaska Native land claims are primarily based upon "aboriginal use and occupancy"--and the "rights" associated with this use. Understanding of "aboriginal use and occupancy" in *both an historic and a current context* is of primary importance. Pertinent questions are:

... What was the aboriginal land occupancy pattern at the time of European contact--the Nineteenth Century? What is it today?

... What are the parameters of Native land use--in the past and today?

... Was, and is, there a definable dimension of Native ethnic territoriality?

... Did aboriginal "property rights" exist?

... What forces of change affected the settlement patterns of Alaska Native groups?

... What changes affected the physical and biological environment and the Native use and dependence upon the environment for his livelihood?

In the succeeding pages an attempt is made to bring together the scattered, diffuse, historic ethnographic record of the Alaska Native people and to place this in context with physiography so that it may not only tell its own story but provide a basis of correlation with the known natural resource values of Alaska and the land tenure conflicts present within the state.

Six salient facts emerge from the text of this chapter:

... The aboriginal Alaska Native completely used the biological resources of the land, interior and contiguous waters in general balance with their sustained human carrying capacity and this use was only limited in scope and amount by technology.

ETHNIC RELATIONSHIPS

... In their use of the biological community for livelihood the Native people "occupied" the land in the sense of being on and over virtually all of it in pursuit of their subsistence, *but they did not* "occupy" the land in any agrarian or legal sense as understood by Anglo-American jurisprudence.

... Native settlement patterns have been most greatly changed or affected, over the last hundred years, by natural physical and biological forces and only in more recent times by the decisions and actions of church, government and industry; and such forces continue to influence settlement patterns today.

... Aboriginal group or "tribal" territoriality with definable bounds did exist in Alaska.

... Most Native groups also recognized individual and family or group "property rights"--particularly in the usufruct sense--to harvest the products of the land.

... Aboriginal group use and occupancy of *territory* to support livelihood *varied greatly in amount* between ethnic groups located in diverse biotic environments throughout Alaska; such variations continue to be the pattern today. And while not all villages or villagers depend upon resources of the land and waters for subsistence to the same extent, it remains a dominant and characteristic way of life for most of the Native communities, where about three-fourths of Alaska's Eskimos, Indians and Aleuts live.

THE LAND

The extremes, variations and vastness of the land called Alaska are well documented and should require little comment. But comment is required because comprehension of Alaska - the land -, even by long-time residents, is a most difficult thing to achieve. Its east-west span covers a distance of 2,000 miles, and from north to south a distance of 1,100 miles. The state's coastline is 33,000 miles in length, which is 50 percent longer than that of the continental U. S. Hundreds of islands, mostly undeveloped, are found along the north Gulf Coast, the Alaska Peninsula, and the Bering Sea coast in addition to the Aleutian Islands. Alaska contains 375 million acres of land, and over 3 million lakes.

Twelve major river systems, plus three additional major rivers as tributaries of the Yukon, drain two-thirds of the state. Four of these, the Yukon, Stikine, Alek, and Taku, can be classed as major international rivers.

Two vast mountain systems divide the state into four major physiographic divisions which have greatly influenced human settlement patterns. The two longest mountain ranges are the Brooks Range, which separates the Arctic region from the interior, and the Alaska-Aleutian Range, which extends westward along the Alaska Peninsula and the Aleutian Islands and northward about 200 miles along the peninsula then eastward to Canada. Other shorter but also important ranges are the Chugach Mountains forming a rim to the central north Gulf Coast and the Wrangell Mountains lying to the northeast of the Chugach Range and south of the Alaska Range. Both of these shorter ranges merge with the St. Elias mountains in Canada, extending southeastward over southeast Alaska as the Coastal mountains. Numerous peaks in excess of 10,000 feet are found in all but the Brooks Range. The highest peak in the North American Continent, Mt. McKinley, is found in Alaska along with several more towering above 16,000 feet.

Permafrost is a major factor in the geography and human use pattern of Alaska. Defined as a layer of sub-soil in which the temperature has been below freezing continuously from a few to several thousands of years, it exists where summer heating fails to descend to the base of the layer of frozen ground. Permafrost covers most of the northern third of the state. Discontinuous or isolated areas of permafrost exist over the central portion in an overall area covering nearly a third of the state. No permafrost exists in the southcentral and southern coastal portions, including southeast Alaska, the Alaska Peninsula and the Aleutian chain.

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These physiographic features have a significant effect on Alaska's climate, helping to form four major climatic zones. These are: The maritime zone, which includes southeastern Alaska, the South Coast and southwestern Islands; the transition zone between marine and continental influences -- difficult to define but generally thought of as comprising a very narrow band along the southern portion of the Copper River, the Chugach Mountains, Cook Inlet, Bristol Bay, and the coastal regions of the West Central division; the continental zone, which is made up the remainders of the Copper River and West Central divisions and the Interior Basin; and the Arctic zone north of the Rocky Mountain System divide.

In the maritime zone a coastal mountain range coupled with plentiful moisture produces precipitation amounts up to 200 inches in the southeast panhandle, and up to 150 inches along the north Gulf Coast. Amounts taper to near 60 inches on the southern side of the Alaska Range in the peninsula and to about 30 inches along the Aleutian chain. Precipitation amounts decrease rapidly to the north with an average of about 12 inches in the continental interior zone and only six inches or less in the arctic region.

Snowfall makes up a large portion of the total annual precipitation. For example, Yakutat averages 216 inches of snow annually and has a total annual precipitation of about 130 inches. Along the Arctic slope, Barrow receives an average of 29 inches of snow annually and a total annual precipitation of slightly more than four inches. Total snow depths on the ground are controlled by the temperature of an area. Fortunately, most of the areas of heavy snow have relatively mild temperatures which prevent total depths from becoming excessive.

Mountainous terrain plus a normal storm track, which exposes the Aleutian Island chain, the Alaska Peninsula, and all of the coastal area of the Gulf of Alaska to a large majority of the storms crossing the north Pacific, results in a variety of wind problems. Direct exposure to the wind of the storms themselves results in the frequent occurrence of winds in excess of 50 mph during all but the summer months, and on occasion even then for the land areas along the storm track. Shemya, on the western end of the Aleutian Islands, has experienced winds of an estimated 139 mph. Wind velocities approaching 100 mph are not common but do occur, usually because of special conditions caused by the mountainous terrain, such as narrow passes.

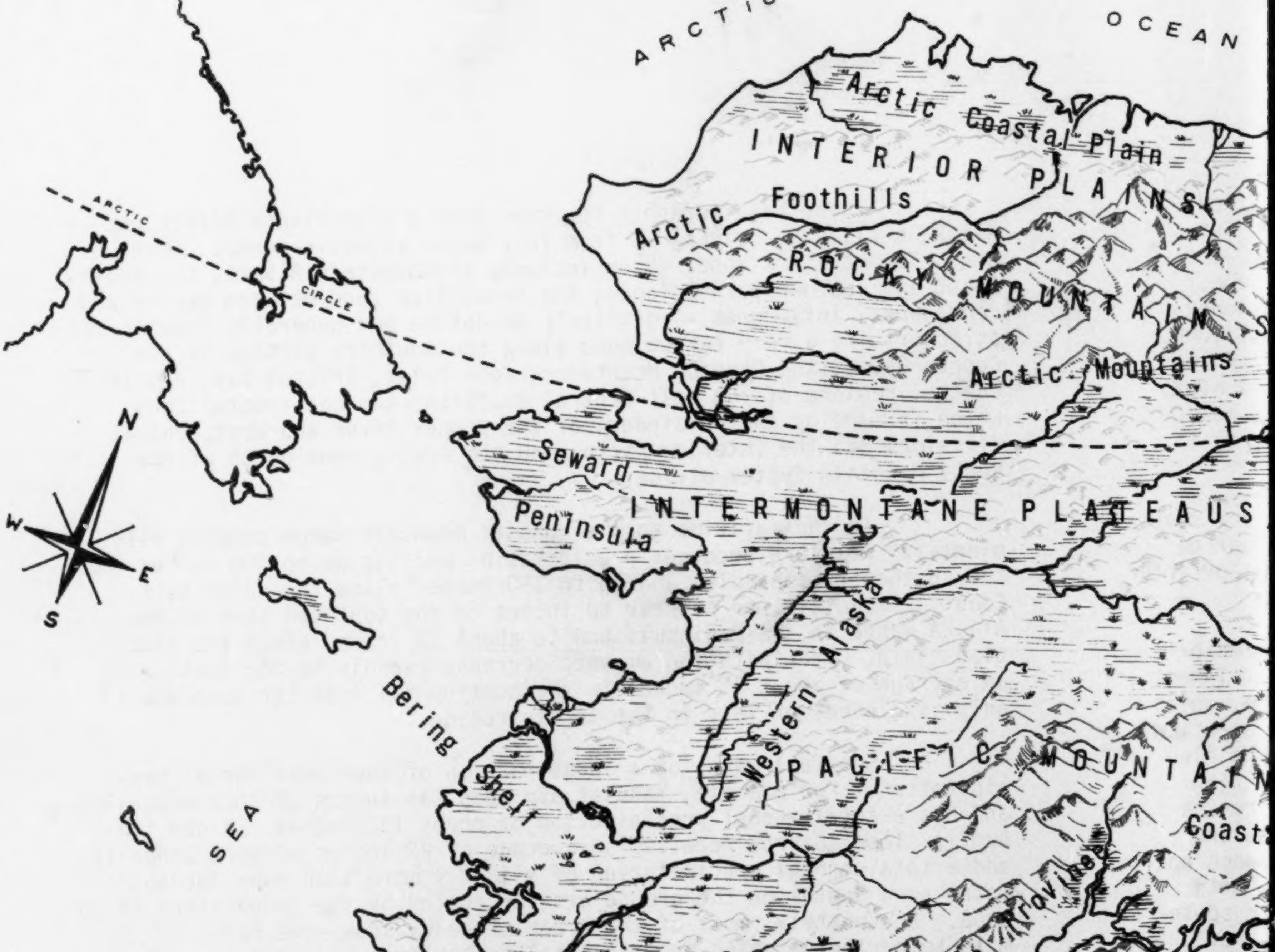
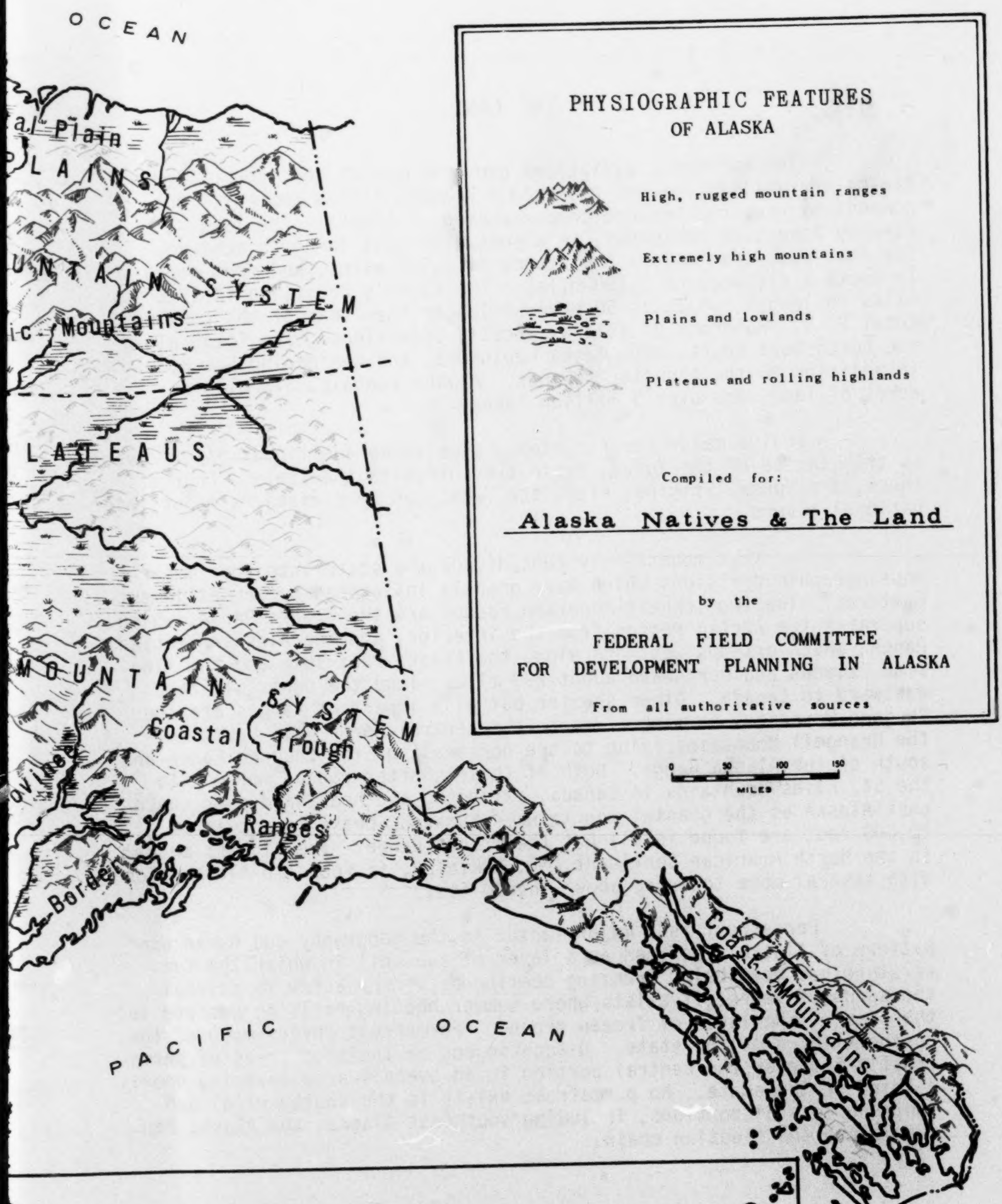

ARCTIC OCEAN
Arctic Coastal Plain
INTERIOR PLAINS
Arctic Foothills
ROCKY MOUNTAINS
Arctic Mountains
ARCTIC CIRCLE
N
W
E
S
Seward Peninsula
INTERMONTANE PLATEAUS
Western Alaska
Bering Shelf
BERING SEA
PACIFIC MOUNTAINS
Coast
Aleutian Province
Border
Ahklun Mts.
Alaska
Pacific
PACI

FIGURE III - 1


OCEAN
al Plain
PLAINS
UNTAIN SYSTEM
ic Mountains
LATEAUS
MOUNTAIN SYSTEM
Coastal Trough
Ranges
ovince
Border
Coast Mountains
PACIFIC OCEAN
PHYSIOGRAPHIC FEATURES OF ALASKA
High, rugged mountain ranges
Extremely high mountains
Plains and lowlands
Plateaus and rolling highlands
Compiled for:
Alaska Natives & The Land
by the
FEDERAL FIELD COMMITTEE FOR DEVELOPMENT PLANNING IN ALASKA
From all authoritative sources
0
50
100
150
MILES

URE III - 1

An occasional storm will either develop in or move into the Bering Sea, then north or northeastward, creating strong winds along the western coastal area. Because of the quite low level flat ground in many places along the coast, the winds will cause flooding during the time the winds are blowing onshore. Occasional storms moving eastward across the southern Arctic Oeean cause winds of 50 mph or higher along the Arctic coast. Except for local strong wind conditions, winds are generally light in the interior sections.

Strong winds, or in fact any wind occurring in the areas of extreme winter cold, creat a definite human hazard and greatly influence man's use and occupancy patterns.

Mean annual temperatures in Alaska range from the low 40's under the maritime influence in the south to a chilly 10 degrees along the Arctic Slope, to the north of the Brooks Mountain Range. The greatest temperature contrast between seasons is found in the central and eastern portion of the Continental Interior. In this area summer heating produces average maximum temperatures in the upper 70's with extreme readings in the 90's. The highest recorded temperature for the state is 100 degrees, and occurred at Fort Yukon in June of 1915. In winter the lack of sunshine permits radiation to lower temperatures to the minus 50's and occasionally colder for two or three weeks at a time. Average winter minimums in this area are 20 to 30 degrees below zero. The coldest ever recorded in Alaska is minus 76 degrees, and occurred at Tanana in January of 1886. Elsewhere in the state temperature contrasts are much more moderate. In the maritime zone the summer to winter range of average temperatures is from near 60 to the 20's. In the trasition zone the range is from the low 60's to near zero. The west central part of the state, except for the northern coastal region, is colder with a range from the mid-50's to near 10 below zero. The Arctic Slope has a range extending between the upper-40's and 20 below zero.

Winter temperatures play a principal role in the flow of most of Alaska's rivers. Begining usually in October and extending into May, and sometimes early June for the northermost streams, thick layers of ice form -- in fact some rivers cease to flow completely during the coldest months.

Thus, the state's physiographic, climatic and resultant biotic regions are large and varied; and in some zones, taxing demands are made upon all forms of life. In the northern reaches mosses and lichens may lay a carpet only a few inches thick in the span of centuries, while 1400 miles to the southeast in another region of the state a conifer will reach gigantic proportions during the same period of time. An annual temperature spread of 160°F. is not uncommon to some locations, and precipitation ranges from 200 inches to 4 inches per year.

Residing in this land of contrast are Native peoples with varied ethnic origins and cultural traits. Throughout history and still today they share one great thing in common -- their dependence upon the land and its waters for their very existence.

Man's survival in Alaska is the result of certain adjustments to the environment. Sod houses of small size have been the best adaptation to some areas while the log cabin is the most logical for others. Clothing embodies the best use of the resources available for the best protection from the elements.

The abundance and variety of food is determined by the cycles and availability of various plants, animals, and fish in the area. Fuel, or the lack of it, is determined by the vegetation, and driftwood deposited by the sea, or the amount of blubber available.

Transportation is determined by the terrain and the kind of animal to be hunted. Kayaks and umiaks were developed for sea hunting, and dog sleds for land hunting.[1]

Alaska is often pictured as a hunter's paradise. No vision could be more misleading. True, there are areas where wildlife abounds. There are other areas, some as large as most states, where few or no game animals exist. A case in point is the northern caribou that wander over the Arctic tundra, inhabiting one area for a few months then migrating to another. Oftentimes they are found hundreds of miles from where they were at the same time in previous years. Sometimes they avoid using a part of their range or migrating route for years. Other large areas such as the Yukon-Kuskokwim deltas support only waterfowl and small furbearers. Much the same may be said for the Aleutian Islands. It is only when discussing southern and interior Alaska that we can deal in in terms of biological populations existing permanently in the same location. And even these are subject to the cyclic fluctuations common to most forms of wildlife.

To a human population depending upon these resources for survival, this meant adoption of a way of life that would enable them to obtain food, clothing and shelter at all times of the year. Most imperative was continual contact with their food supply. It also meant a human population density at a level commensurate with the natural productivity of the land and the waters. That the Native people were able to devise means of covering long distances in search of food, for living in the open for long periods of time, of traveling over moving sea ice, and means of preserving their food during that part of the year when the temperature was above freezing is proof of their resourcefulness and energy.

The discussion in this part will offer a regional theme of Native relationship to environments. On a regional basis the land, water, biotic resource and climate are characterized in relationship to Native ethnic groups and their settlement and subsistence patterns -- historically and today.[2,3]

---

[1] Norman J. Wilimovsky (ed.) and John N. Wolfe (assoc. ed.), *Environment of the Cape Thompson Region, Alaska.* United States Atomic Energy Commission, Division of Technical Information, 1966.

[2] Clyde Wahrhaftig, *Physiographic Divisions of Alaska.* Geological Survey Professional Paper 482. Washington: United States Government Printing Office, 1965.

[3] General climatological information from reports of Environmental Science Service Administration, U. S. Department of Commerce.

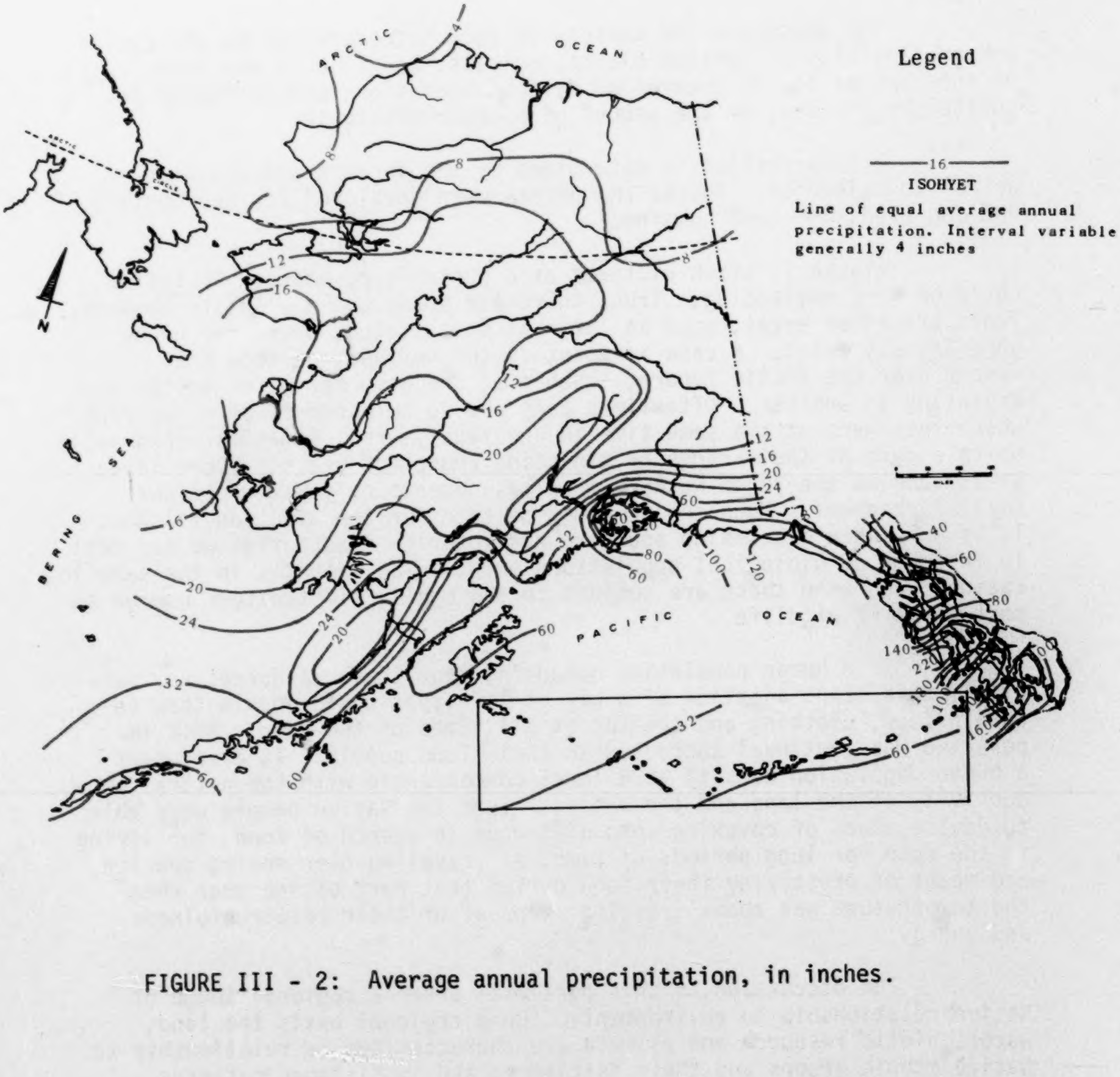
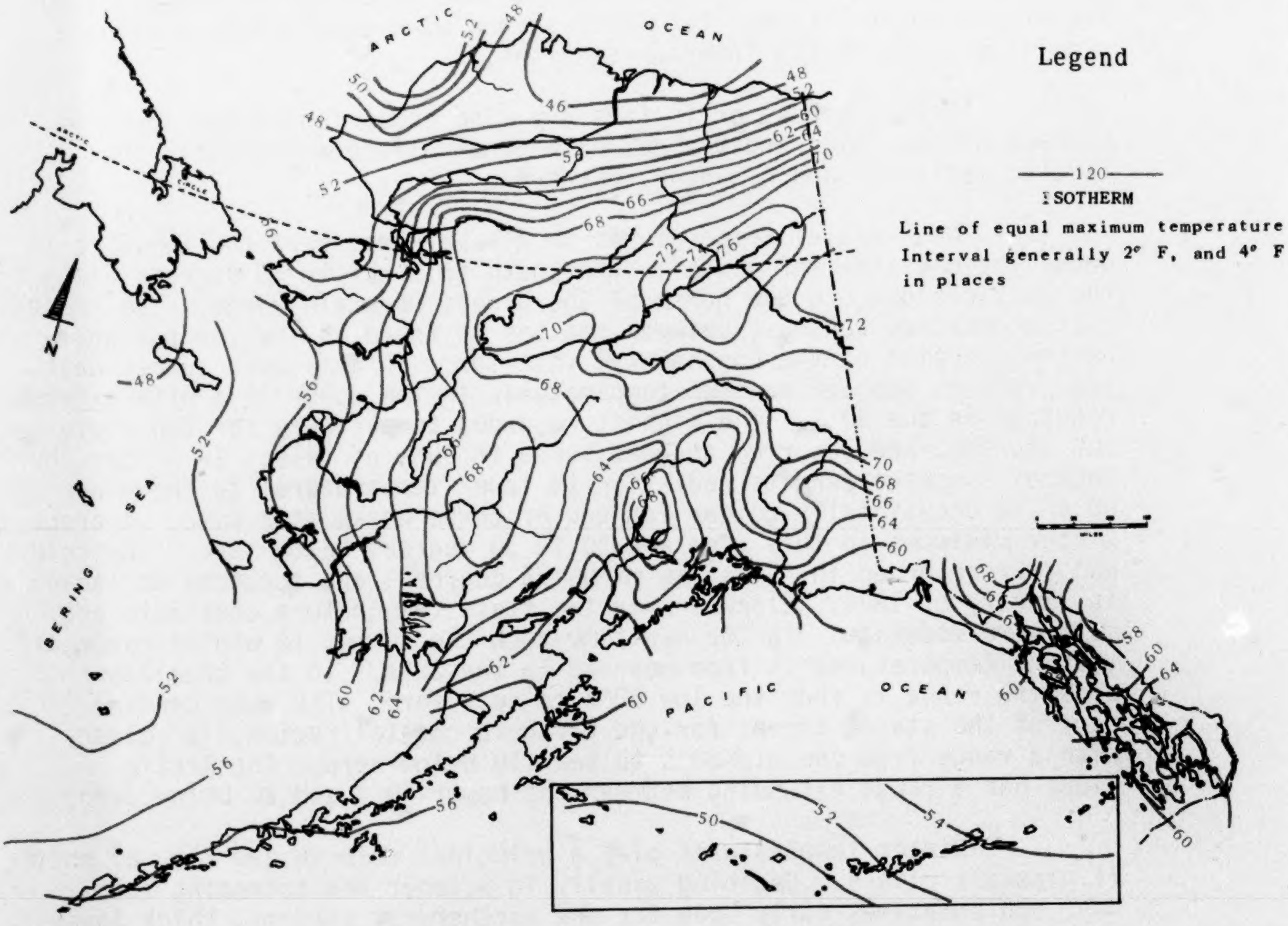

ARCTIC OCEAN
ARCTIC CIRCLE
BERING SEA
PACIFIC OCEAN
N
Legend
16
ISOHYET
Line of equal average annual precipitation. Interval variable generally 4 inches
MILES
4
8
12
16
20
24
32
40
60
80
100
120
140
160
180
220

FIGURE III - 2: Average annual precipitation, in inches.


ARCTIC OCEAN
BERING SEA
PACIFIC OCEAN
ARCTIC CIRCLE
N
46
48
50
52
56
58
60
62
64
66
68
70
72
74
76
54
Legend
120
ISOTHERM
MILES

Line of equal maximum temperature Interval generally 2° F, and 4° F in places

FIGURE III - 3: Mean daily maximum temperatures (degrees Fahrenheit) in July

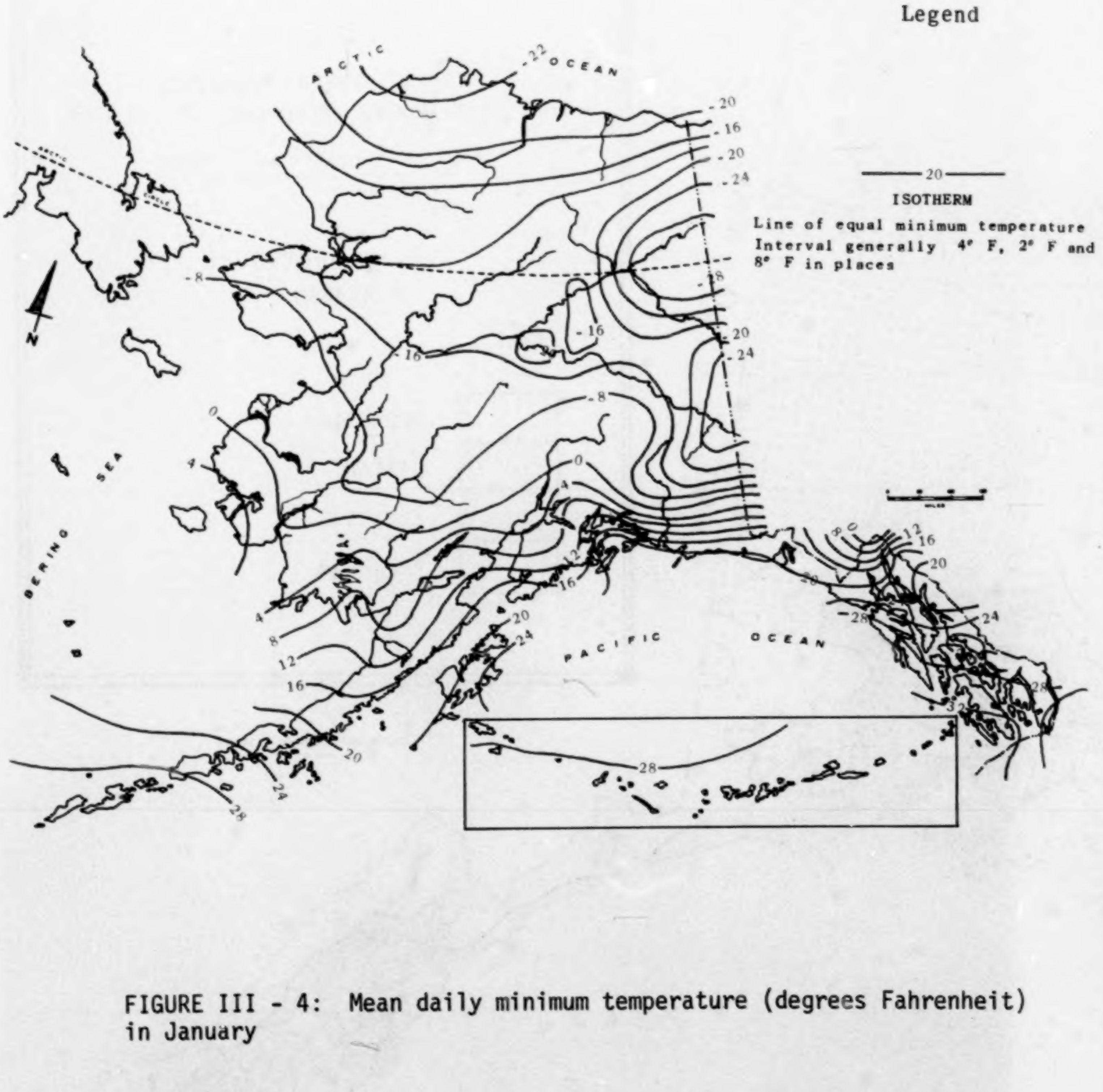

Legend
20
ISOTHERM
Line of equal minimum temperature
Interval generally 4° F, 2° F and 8° F in places
ARCTIC OCEAN
BERING SEA
PACIFIC OCEAN
-22
-20
-16
-20
-24
-28
-20
-24
-8
-16
-8
0
4
8
12
16
20
24
28
32
N

FIGURE III - 4: Mean daily minimum temperature (degrees Fahrenheit) in January

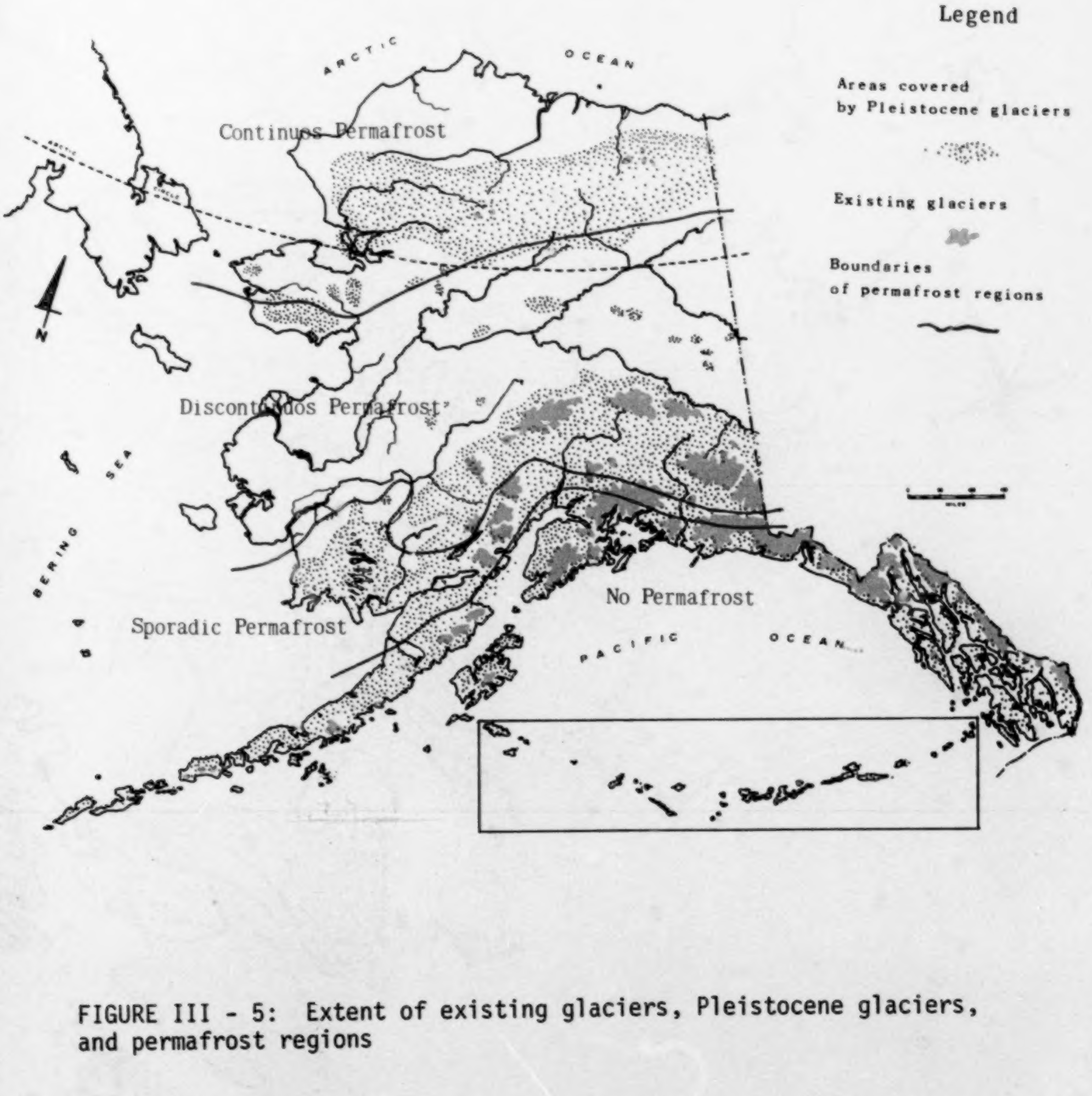

Legend
Areas covered by Pleistocene glaciers
Existing glaciers
Boundaries of permafrost regions
ARCTIC OCEAN
Continuos Permafrost
Discontinuos Permafrost
Sporadic Permafrost
No Permafrost
BERING SEA
PACIFIC OCEAN
N

FIGURE III - 5: Extent of existing glaciers, Pleistocene glaciers, and permafrost regions

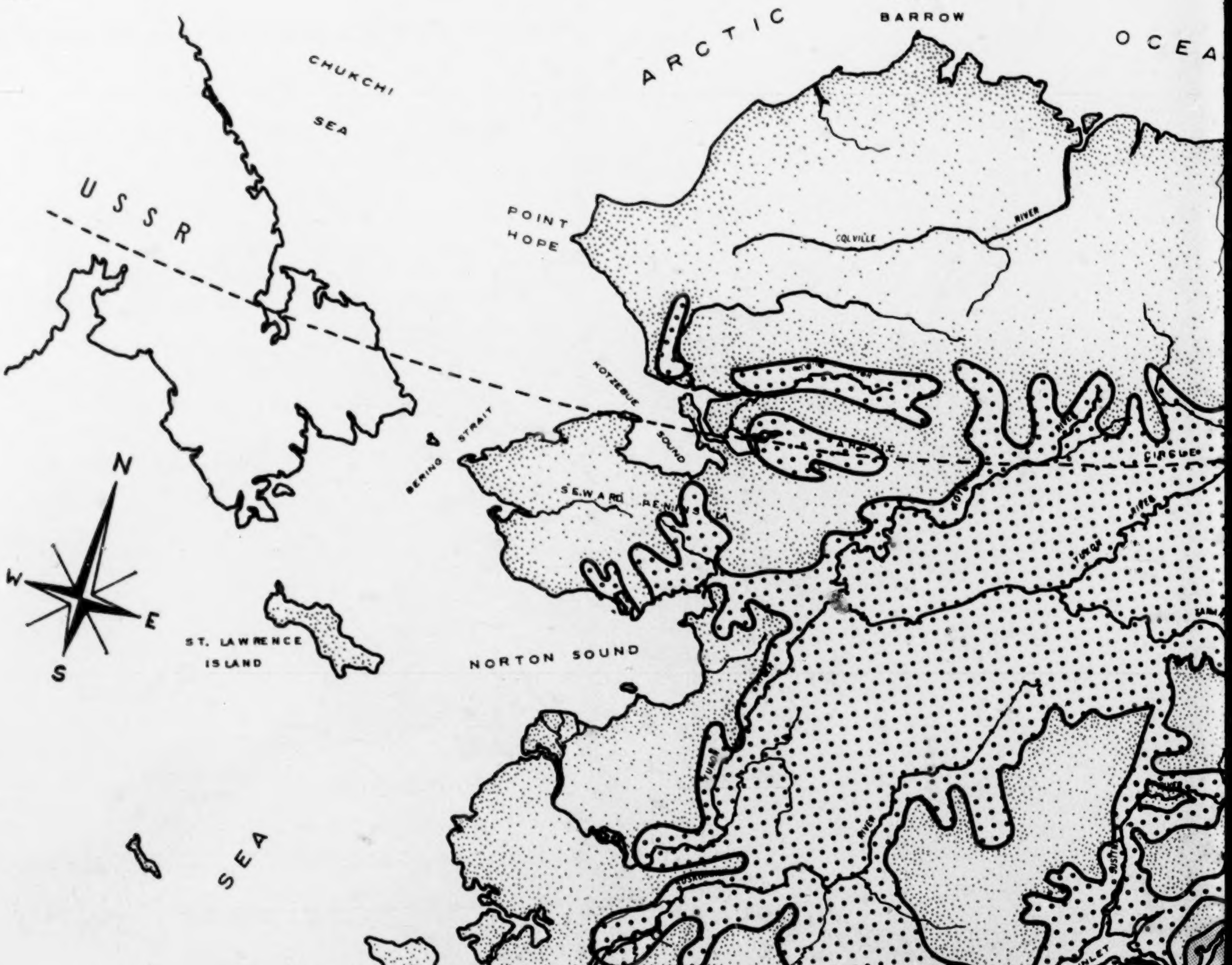
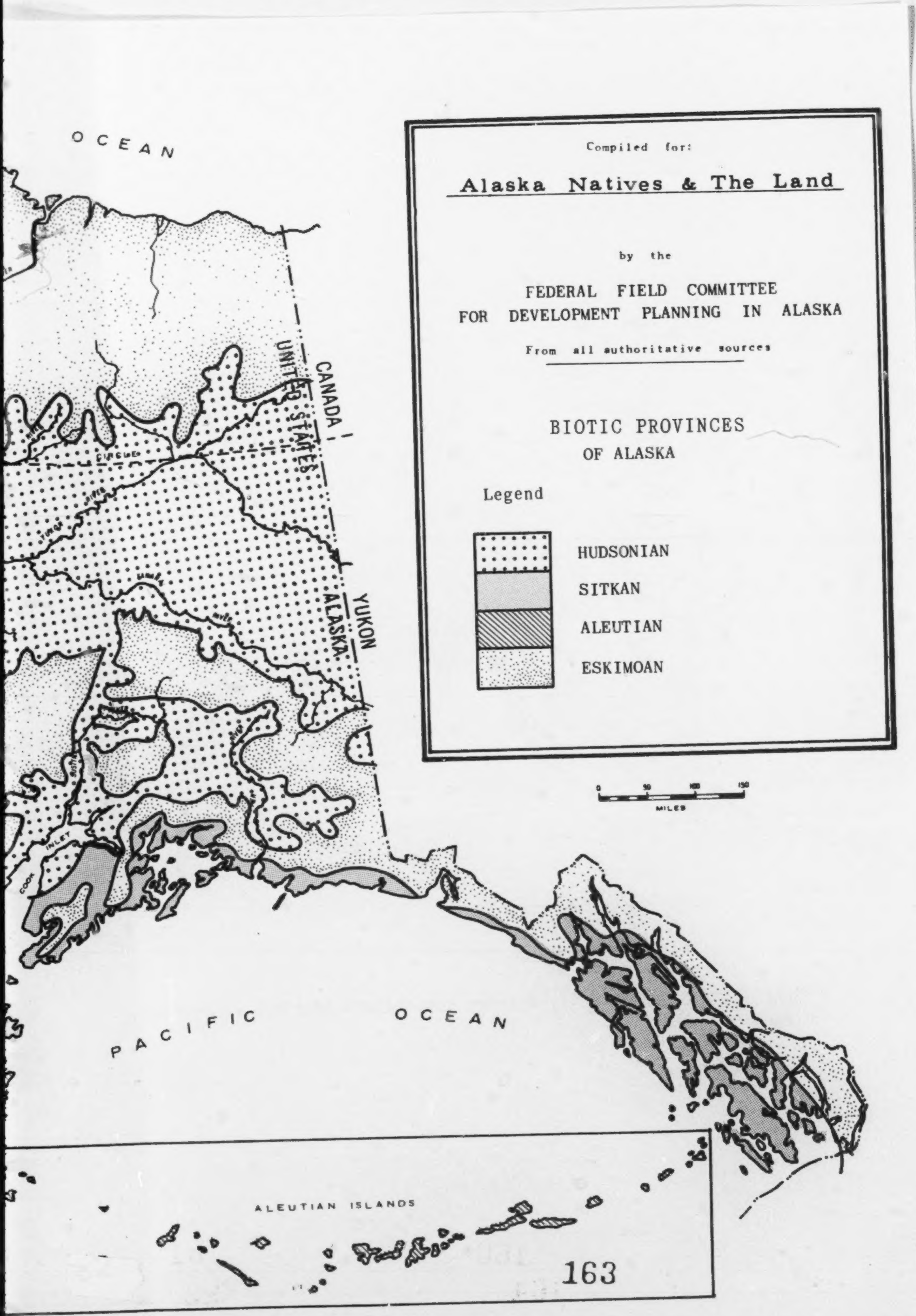

POINT BARROW
ARCTIC
OCEA
CHUKCHI SEA
USSR
POINT HOPE
COLVILLE
RIVER
KOTZEBUE SOUND
BERING STRAIT
SEWARD PENINSULA
ARCTIC
CIRCLE
N
W
E
S
ST. LAWRENCE ISLAND
NORTON SOUND
BERING SEA
NUNIVAK ISLAND
KUSKOKWIM BAY
LAKE CLARK
COOK INLET
BECHAROF LAKE
KODIAK ISLAND
PA
ALEUTIAN ISLANDS

FIGURE III - 6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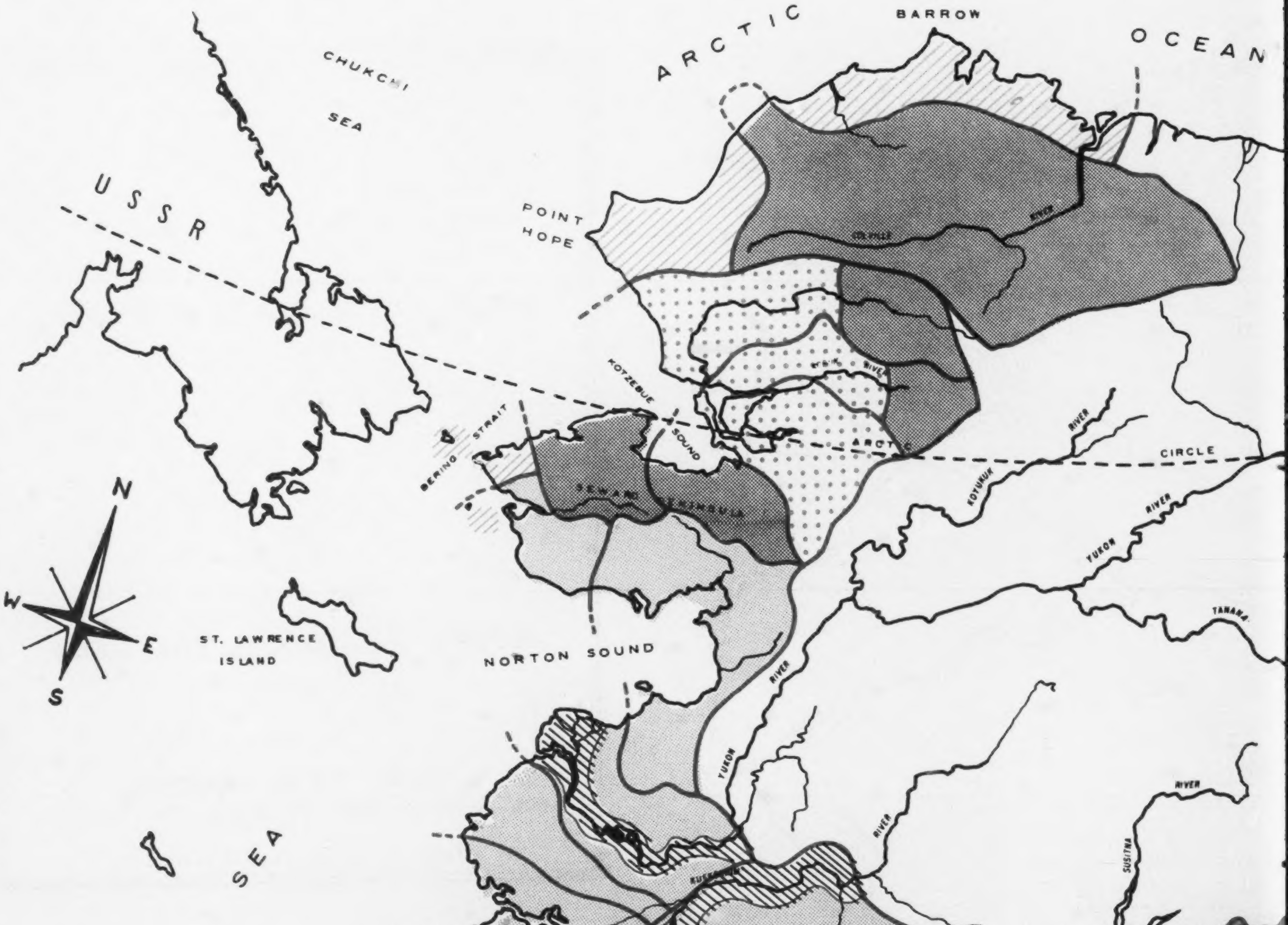
FOR DEVELOPMENT PLANNING IN ALASKA
From all authoritative sources
BIOTIC PROVINCES
OF ALASKA
Legend
HUDSONIAN
SITKAN
ALEUTIAN
ESKIMOAN
0
50
100
150
MILES
OCEAN
PACIFIC OCEAN
CANADA
UNITED STATES
YUKON
ALASKA
COOK INLET
ALEUTIAN ISLANDS

GURE III - 6


ARCTIC OCEAN
POINT BARROW
CHUKCHI SEA
USSR
POINT HOPE
COLVILLE RIVER
KOTZEBUE SOUND
RIVER
ARCTIC CIRCLE
BERING STRAIT
SEWARD PENINSULA
KOYUKUK RIVER
YUKON RIVER
TANANA
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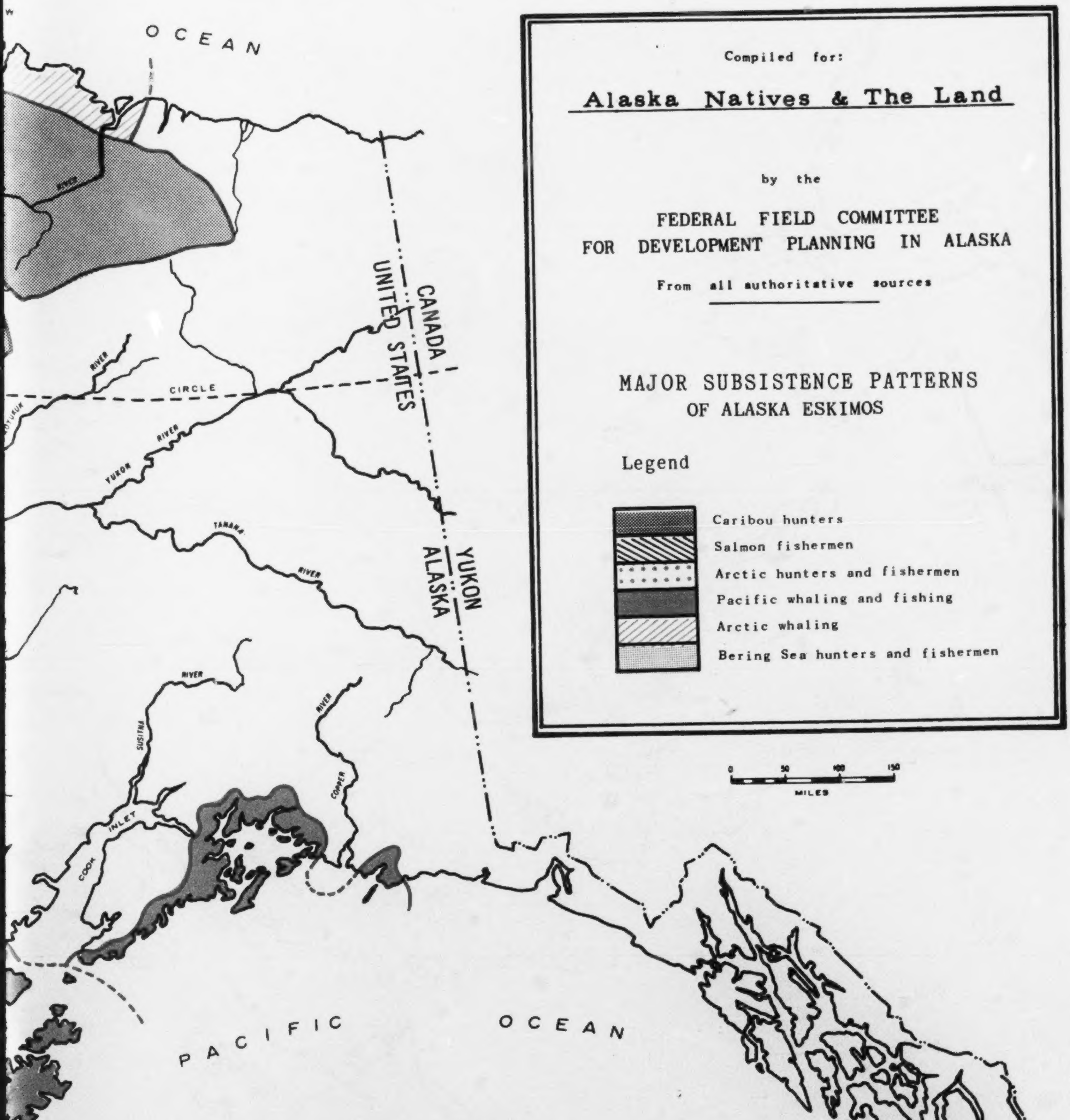
ST. LAWRENCE ISLAND
NORTON SOUND
YUKON RIVER
BERING SEA
RIVER
SUSITNA
COOK INLET
KUSKOKWIM
NUNIVAK ISLAND
LAKE CLARK
KUSKOKWIM BAY
RIVER
NA
BECHAROFF LAKE
KODIAK ISLAND
PACI
ALEUTIAN ISLANDS

FIGURE III - 7


OCEAN
CANADA
UNITED STATES
YUKON
ALASKA
CIRCLE
RIVER
YUKON RIVER
TANANA RIVER
RIVER
SUSITNA
RIVER
COPPER
COOK INLET
PACIFIC OCEAN
ALEUTIAN ISLANDS
0 50 100 150
MILES

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From all authoritative sources

MAJOR SUBSISTENCE PATTERNS
OF ALASKA ESKIMOS

Legend

- ▩ Caribou hunters
- ▧ Salmon fishermen
- ⁘ Arctic hunters and fishermen
- ■ Pacific whaling and fishing
- ▨ Arctic whaling
- ░ Bering Sea hunters and fishermen

FIGURE III - 7

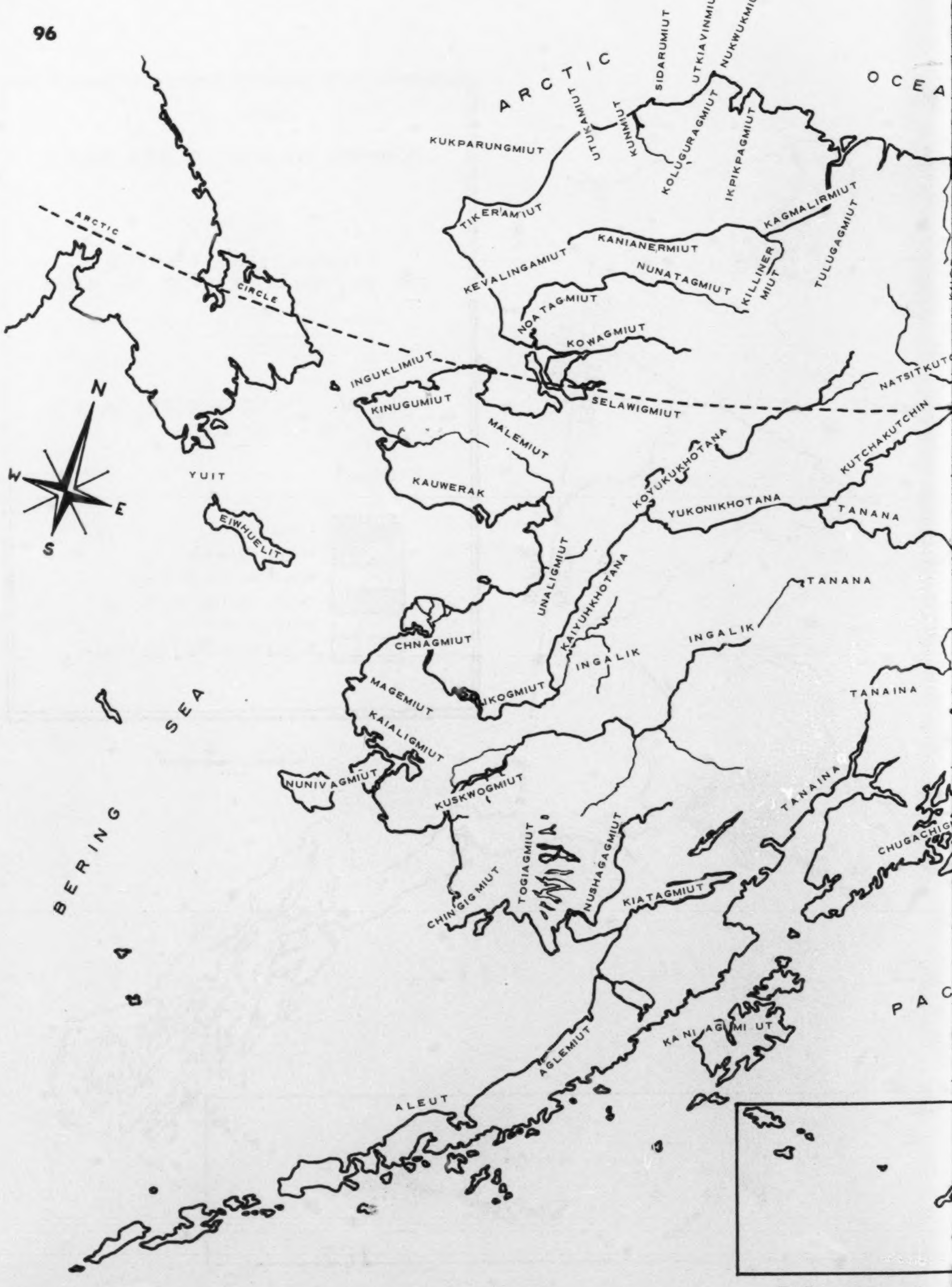
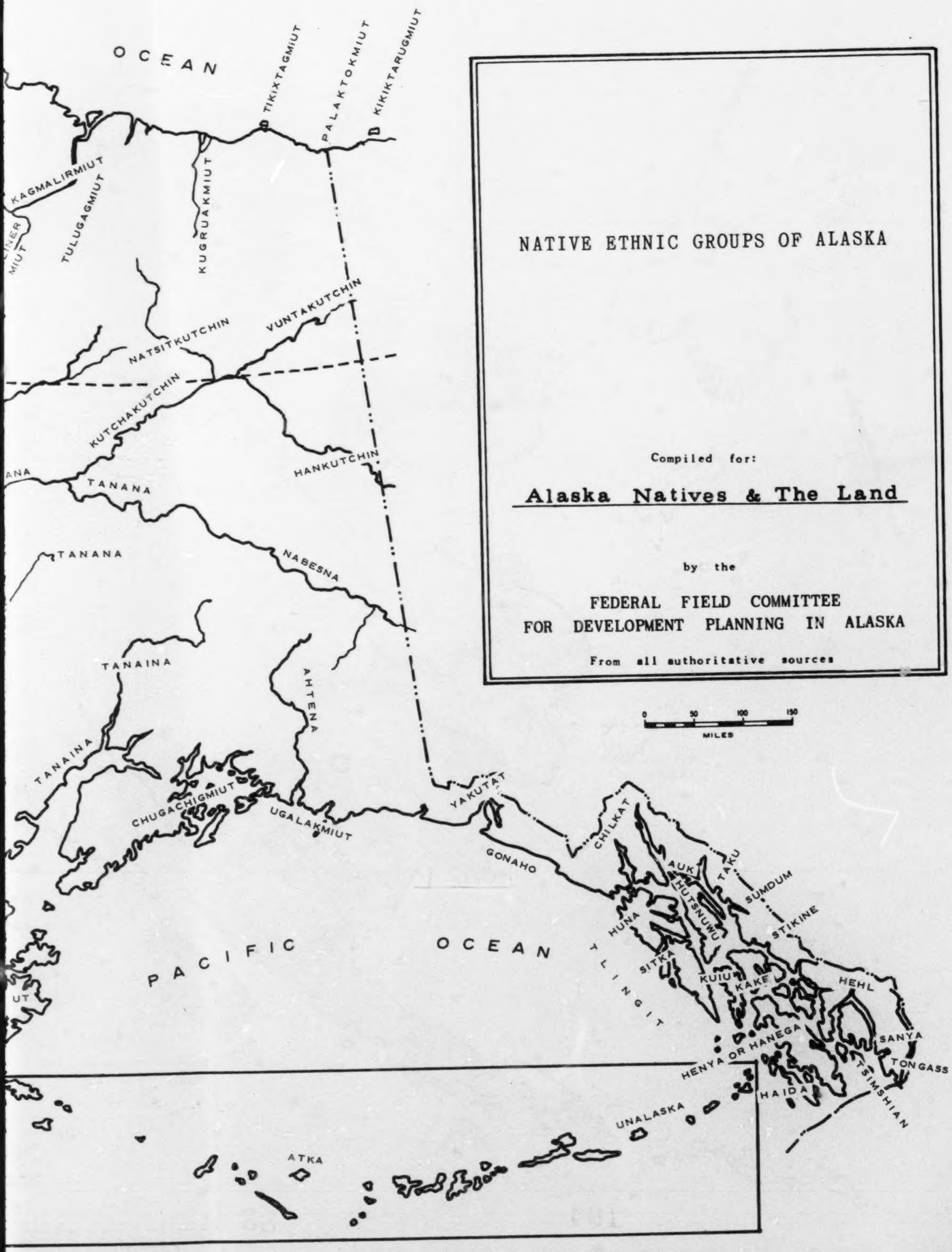

ARCTIC
SIDARUMIUT
UTKIAVINMIUT
NUKWUKMIUT
OCEA
KUKPARUNGMIUT
UTUKAMIUT
KUNMIUT
KOLUGURAGMIUT
IKPIKPAGMIUT
ARCTIC
CIRCLE
TIKERAMIUT
KAGMALIRMIUT
KANIANERMIUT
TULUGAGMIUT
KEVALINGAMIUT
NUNATAGMIUT
KILLINERMIUT
NOATAGMIUT
KOWAGMIUT
INGUKLIMIUT
NATSITKUT
KINUGUMIUT
SELAWIGMIUT
MALEMIUT
KUTCHAKUTCHIN
N
W
E
S
YUIT
KAUWERAK
KOYUKUKHOTANA
YUKONIKHOTANA
TANANA
EIWHUELIT
UNALIGMIUT
KAIYUHKHOTANA
TANANA
CHNAGMIUT
INGALIK
INGALIK
IKOGMIUT
MAGEMIUT
TANAINA
SEA
KAIALIGMIUT
NUNIVAGMIUT
TANAINA
KUSKWOGMIUT
CHUGACHIG
BERING
TOGIAGMIUT
NUSHAGAGMIUT
CHINGIGMIUT
KIATAGMIUT
PAC
KANIAGMIUT
AGLEMIUT
ALEUT

FIG. III - 8


NATIVE ETHNIC GROUPS OF ALASKA
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From all authoritative sources
0
50
100
150
MILES
OCEAN
TIKIXTAGMIUT
PALAKTOKMIUT
KIKIKTARUGMIUT
KAGMALIRMIUT
TULUGAGMIUT
KUGRUAKMIUT
VUNTAKUTCHIN
NATSITKUTCHIN
KUTCHAKUTCHIN
HANKUTCHIN
TANANA
TANANA
NABESNA
TANAINA
AHTENA
TANAINA
CHUGACHIGMIUT
UGALAKMIUT
YAKUTAT
GONAHO
CHILKAT
AUK
TAKU
HUTSNUWU
SUMDUM
HUNA
STIKINE
SITKA
KUIU
KAKE
HEHL
TLINGIT
SANYA
TONGASS
HENYA OR HANEGA
HAIDA
TSIMSHIAN
UNALASKA
ATKA
PACIFIC
OCEAN

FIG. III - 8

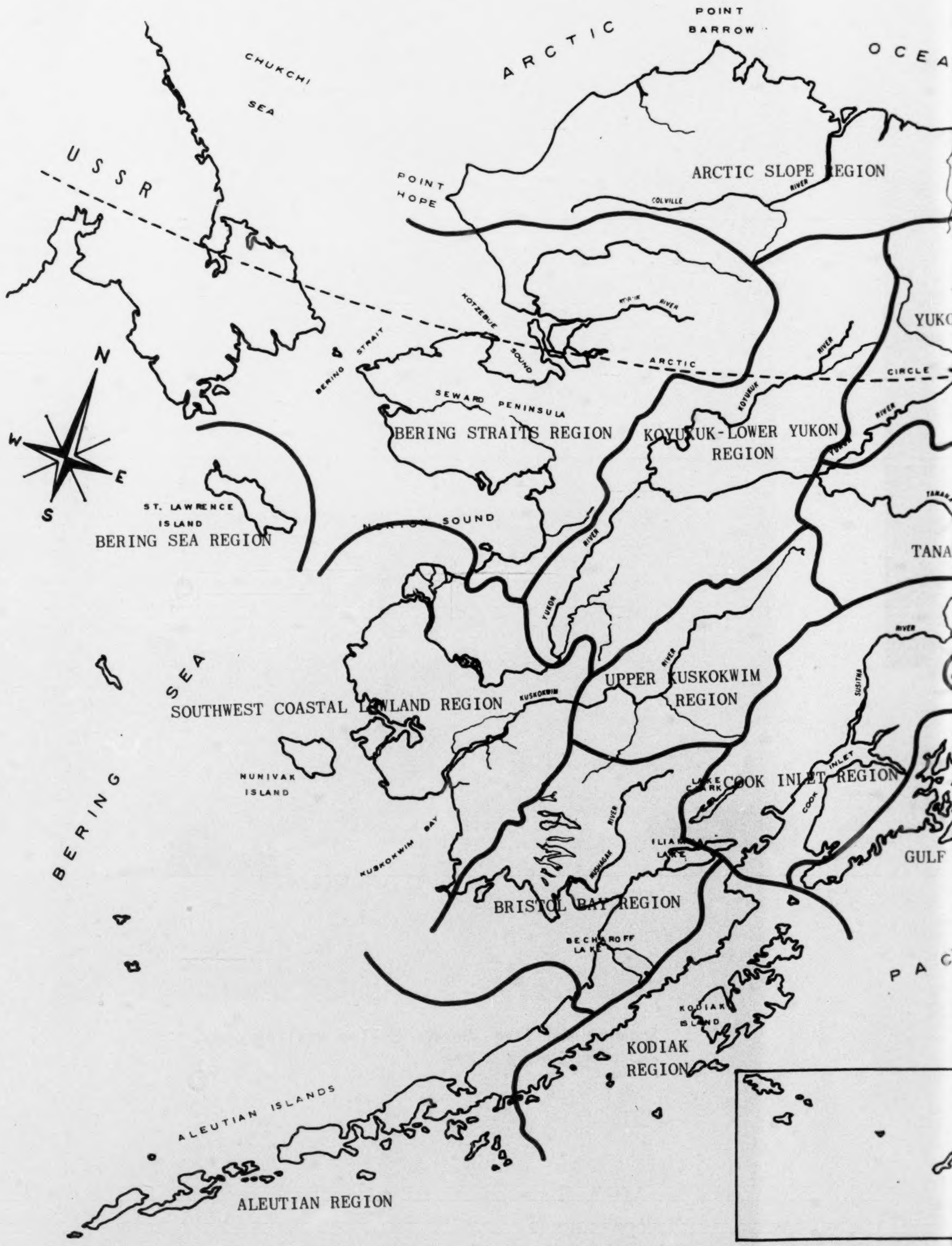
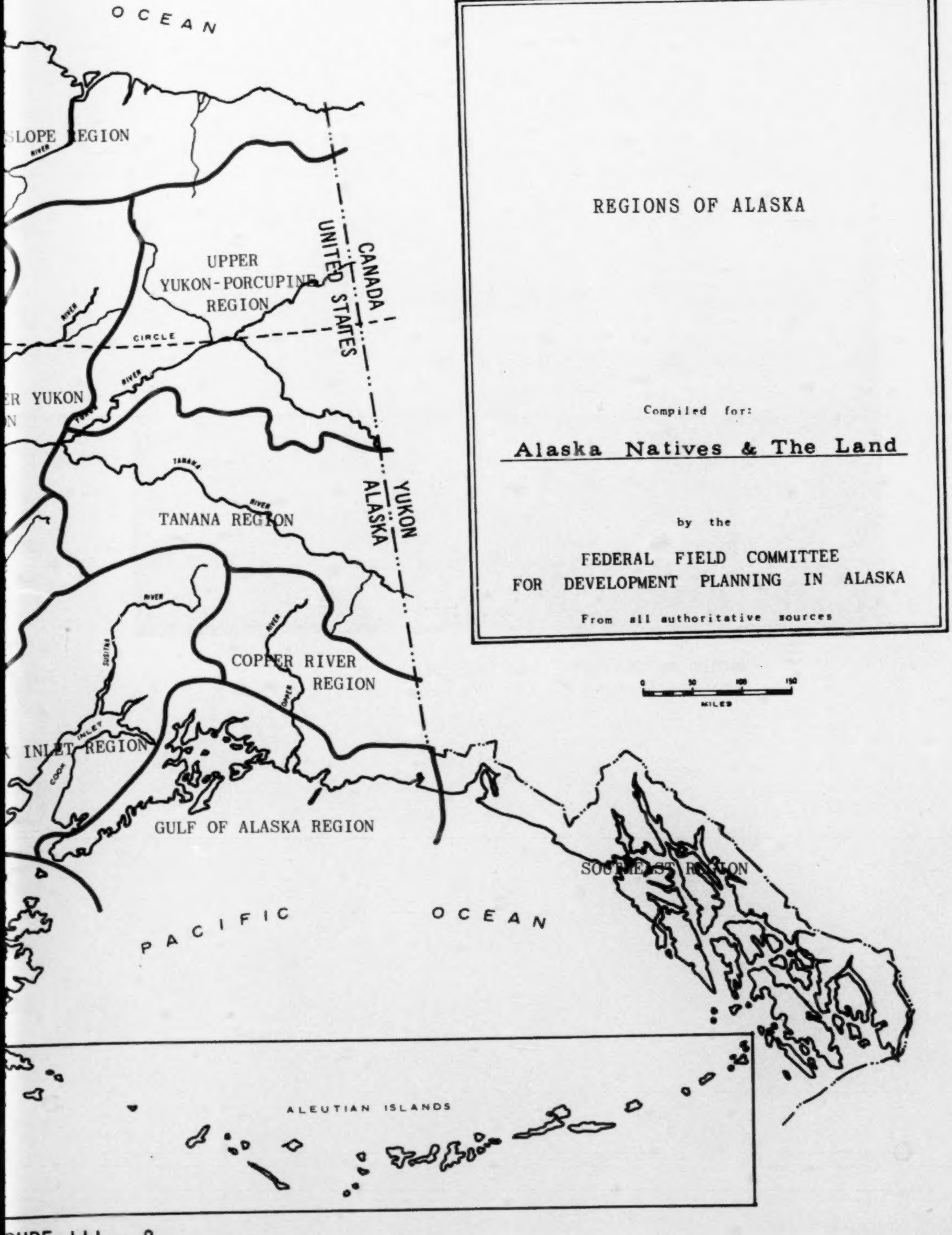

POINT BARROW
ARCTIC
OCEA
CHUKCHI SEA
USSR
POINT HOPE
ARCTIC SLOPE REGION
COLVILLE RIVER
KOTZEBUE SOUND
KOBUK RIVER
BERING STRAIT
ARCTIC CIRCLE
YUKO
SEWARD PENINSULA
BERING STRAITS REGION
KOYUKUK-LOWER YUKON REGION
KOYUKUK RIVER
YUKON RIVER
TANANA
N
W
E
S
ST. LAWRENCE ISLAND
BERING SEA REGION
NORTON SOUND
TANA
SEA
SOUTHWEST COASTAL LOWLAND REGION
KUSKOKWIM
UPPER KUSKOKWIM REGION
SUSITNA
NUNIVAK ISLAND
BERING
COOK INLET REGION
LAKE CLARK
COOK INLET
KUSKOKWIM BAY
ILIAMNA LAKE
NUSHAGAK RIVER
GULF
BRISTOL BAY REGION
BECHAROFF LAKE
PA
KODIAK ISLAND
KODIAK REGION
ALEUTIAN ISLANDS
ALEUTIAN REGION

FIGURE III - 9



REGIONS OF ALASKA

Compiled for:

Alaska Natives & The Land

by the

FEDERAL FIELD COMMITTEE
FOR DEVELOPMENT PLANNING IN ALASKA

From all authoritative sources

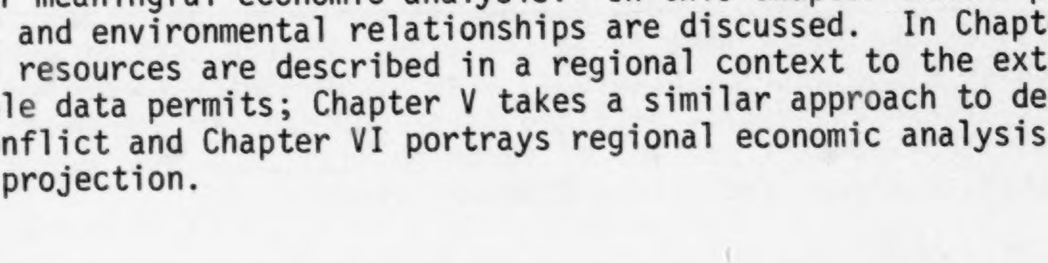
OCEAN
SLOPE REGION
RIVER
UPPER
YUKON-PORCUPINE
REGION
CANADA
UNITED STATES
RIVER
CIRCLE
ER YUKON
N
RIVER
YUKON
TANANA
RIVER
TANANA REGION
YUKON
ALASKA
RIVER
SUSITNA
RIVER
COPPER RIVER
REGION
COPPER
INLET
COOK
K INLET REGION
GULF OF ALASKA REGION
SOUTHEAST REGION
PACIFIC OCEAN
0 50 100 150
MILES
ALEUTIAN ISLANDS

GURE III - 9

REGIONAL ANALYSIS

The choice of regions for this analysis attempts to serve a broad spectrum of interests. Correlation between ethnic populations, physiographic and natural resource patterns, and economic opportunities are desirable to serve both an analysis of historic land ownership "rights" and an assessment of the practicality or desirability of proposed land tenure arrangements to satisfy such "rights."

Accordingly, fifteen regions of the state have emerged which offer to us the greatest degree of homogeneity in physiography, ethnography, biotic provinces, natural resource patterns and aggregate potential for meaningful economic analysis. In this chapter ethnic-physiographic and environmental relationships are discussed. In Chapter IV natural resources are described in a regional context to the extent available data permits; Chapter V takes a similar approach to detail land conflict and Chapter VI portrays regional economic analysis and growth projection.



REGI

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geologic
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cept for

REGIONAL CHARACTERIZATION AND ETHNIC IDENTIFICATION

ARCTIC SLOPE REGION
(56.5 million acres)

Physiographic and Climatic Description

The region includes three major east-west physiographic sections: the Arctic Coastal Plain, Arctic Foothills and the north slope of the Central and Eastern Brooks Range. It is wholly within the Arctic Circle and is bounded by the glaciated Brooks Range to the south and by the Arctic Ocean to the north.

The six hundred mile long Brooks Range, the northwesternmost extension of the main continental mountain system of North America, is a topographic barrier separating the forested lands along the Yukon tributaries to the south from the treeless Arctic plain. A continental divide, north flowing streams meander lazily across the tundra while southward flows join the great river systems of central Alaska. The highest peaks, perennially snow-covered and rising to heights of 9,000 feet, are found in the eastern sections. At the western end the range splits into the smaller De Long Range and Baird Mountains and near the coast gives way to a series of rolling highlands. Several large stream-fed lakes rise in the range and contribute to the rivers flowing northward to the Arctic Ocean. A rugged range, the mountains are most difficult of access except for three passes in the middle--the Howard, the Survey, and the Anaktuvuk--guiding the passage of caribou and human movements alike since before recorded time.

Intermediate between the range and the Arctic plain, the foothill land pattern is one of a gradual descent from south to north. The northern section, dominated by mesa-like mountains, rises to altitudes of 600 to 1,200 feet. The southern section shows rugged relief (as much as 2,500 feet), and is characterized by irregular buttes, mesas, ridges, and undulating tundra plains.

On the Arctic coastal plain, a submerged province until recent geologic time with continuous permafrost, the streams wander at random, and formations of numerous lakes and marshes exist. Extending to a depth of about seventy miles from the coast, this province is flat except for a few isolated hummocks and knobs.

Bisecting the three physiographic provinces of the region is the great Colville River system. Formed by Thunder and Storm Creeks in the De Long Mountains, it flows 350 miles ENE along the Arctic foothill base, turning northward to fan out into the plain and Arctic Ocean.

The Alaskan Arctic plain is a true desert--a desert of cold. Precipitation averages near four inches per year at Barrow. But of greater impact to the biological community--including man--is seasonal differentiation caused by temperature intensity and length of daylight. The brief summer season is marked by a thaw and, for a two-month period, by 24-hour sunshine. The transition from 24 hours of sunlight in late July to the fall equinox is most rapid; and again, the shift from the equinox to the winter solstice involves the change in a short period from twelve hours of daylight to total darkness. At Point Barrow, for example, at 71°23' N., 72 days of winter darkness, beginning November 15, are the rule. Temperature changes cannot be regarded as extreme. In summer the averages hover somewhat above freezing, although highs of 60° or 65° F. may be reached for short periods. From this, there is a gradual shift to the winter temperatures. These are not so extreme as might be imagined, particularly along the coast where 30° F. below zero may be regarded as essentially average.

Winter temperatures, however, while by no means so cold in comparison with the 50° to 70° below zero readings of the deeper interior, may nonetheless be infinitely more severe as a result of intensity of wind. In the Arctic plain and foothills, a somewhat more adequate adjustment on the part of humans in terms of clothing and housing is a necessity. The frigid winters are very long and the summer brief. Physiographic change is slow and little climatic variation has been noted since the 1880's when climatic data were compiled for the first time, and the coastal temperatures at Barrow were found on an average yearly basis to be 8° F. above zero. Streams and lakes are ice-covered much of the year, as is the ocean. Along the North Alaskan coast, one of the determinants of ice movement is the prevailing wind--an easterly wind except in the winter months when it blows from a northeasterly direction. All coastal navigation depends on the vagaries of this wind. The ocean ice pack recedes from the coast for only a short period between August or September, and the time of its reformation generally is November.

Ethnic Identification

The Eskimos of this region were (and are) of three cultures so far as is known. These included the "taremiut," the essentially sedentary, coastal dwellers dependent upon the maritime environment for subsistence; the "nuunamiut," the inland, nomadic hunters of the caribou for subsistence; and the people of the "Thule" culture whose environmental relationships were maritime in Alaska, but whose cultural mores were related to the Canadian-Arctic Basin Eskimo rather than westward towards Asia as supposed for the "taremiut" and "nuunamiut." Figure III - 10 illustrates the location of Arctic Slope ethnic groups and sub-groups in relation to physiography.

... *Taremiut:* Tikeramiut, Kukparungmiut, Utukamiut, Kunmiut, Sidarumiut, Utkiavinmiut, Nukwukmiut;

... *Nuunamiut:* Noatagmiut, Keralingamiut, Kanianermiut, Killinermiut, Tulugagmiut, Koluguragmiut, Ikpikpagmiut, Kagmalirmiut;

... *Thule:* Tikixtagmiut, Kikiktarugmiut.

BERING STRAIT REGION
(36.8 million acres)

Physiographic and Climatic Description

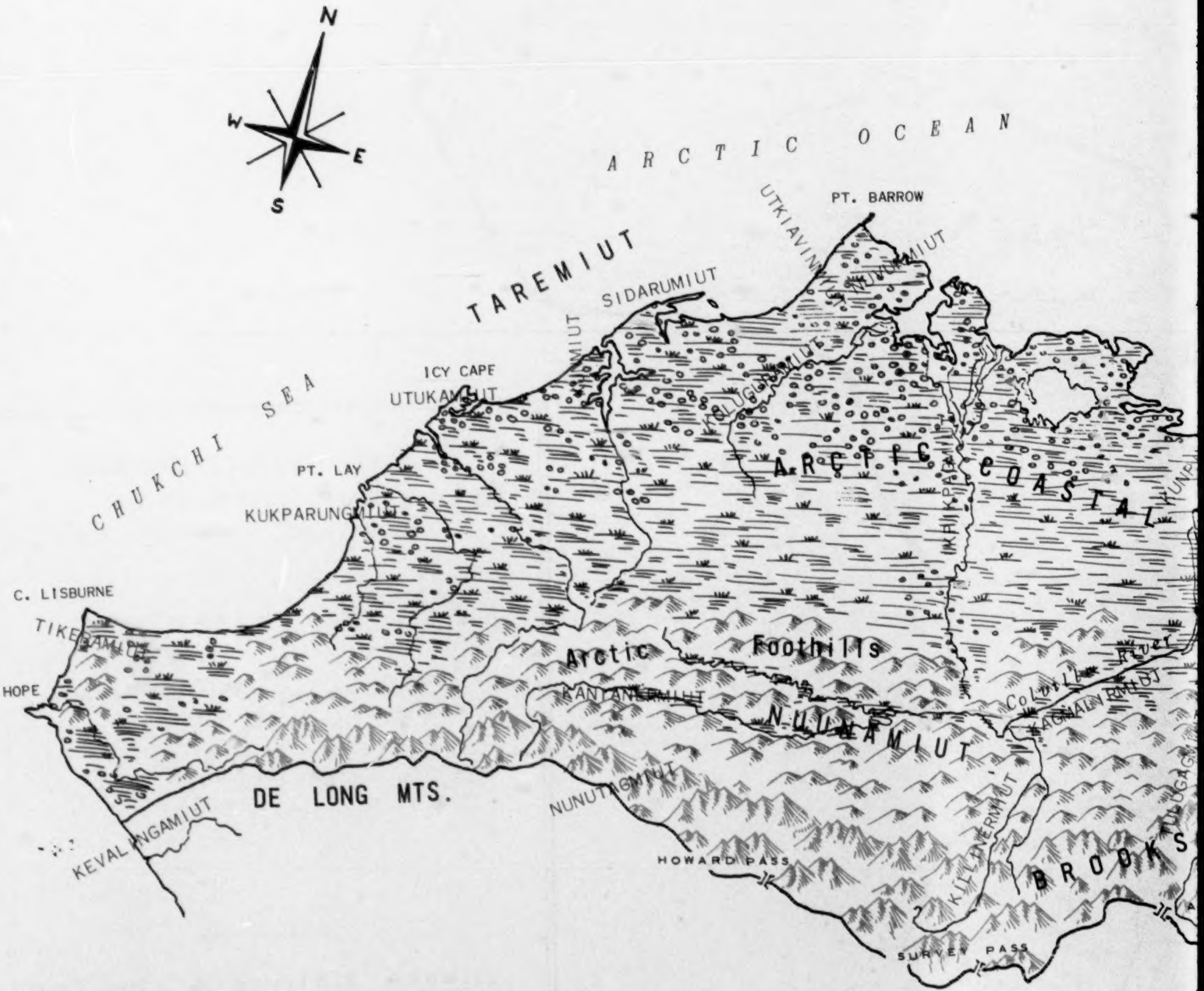
The region includes the following physiographic sections and parts: the Arctic Foothills draining into Kotzebue Sound, southwest slope of De Long Mountains, Noatak Lowlands, Baird Mountains, Central Brooks Range west of Walker Lake, western part of Ambler-Chandalar Ridge west of Nutuvukti Lake, Kobuk-Selawik Lowland, Selawik Hills, Seward Peninsula, Buckland River Lowland, Nulato Hills draining into Norton Sound, a section of Yukon-Kuskokwim Lowland north of the Pikmiktalik River, and Little Diomede Island.

About one-third within the Arctic Circle, dominated by maritime climatic influences, the central focus of this region is the Seward Peninsula. To the north is Kotzebue Sound, and beyond: the ancient beaches of Cape Krustenstern. Beyond this place of early arctic man, reach the rising uplands of the Noatak and Kobuk River drainages in the De Long and Baird Mountains.

The abrupt south front of these four-to-five-thousand-feet-high De Long Mountains forms the northern boundary of the region. Here and in the slightly lower Baird Mountains, rising abruptly also from the Noatak and Kobuk-Selawik Lowlands, are the headwaters of the Kivalina, Wulik, Noatak, Kobuk and Ambler Rivers and numerous lesser streams flowing eventually south and west to the Chukchi Sea.

As the Kobuk skirts the southern edge of the Baird Mountains, it passes sluggishly through a broad river flood plain and lake-dotted lowland which in turn merges with the lowlands of the Selawik River and lake system. Together then they pass at their seaward margins into deltas along Kotzebue Sound.

To the west, along the base of the Peninsula, are the lowlands and gentler hills of the Kobuk, Selawik and Buckland rising eastward towards Purcell Mountain and the divide with the watershed of the Koyukuk and Yukon Rivers.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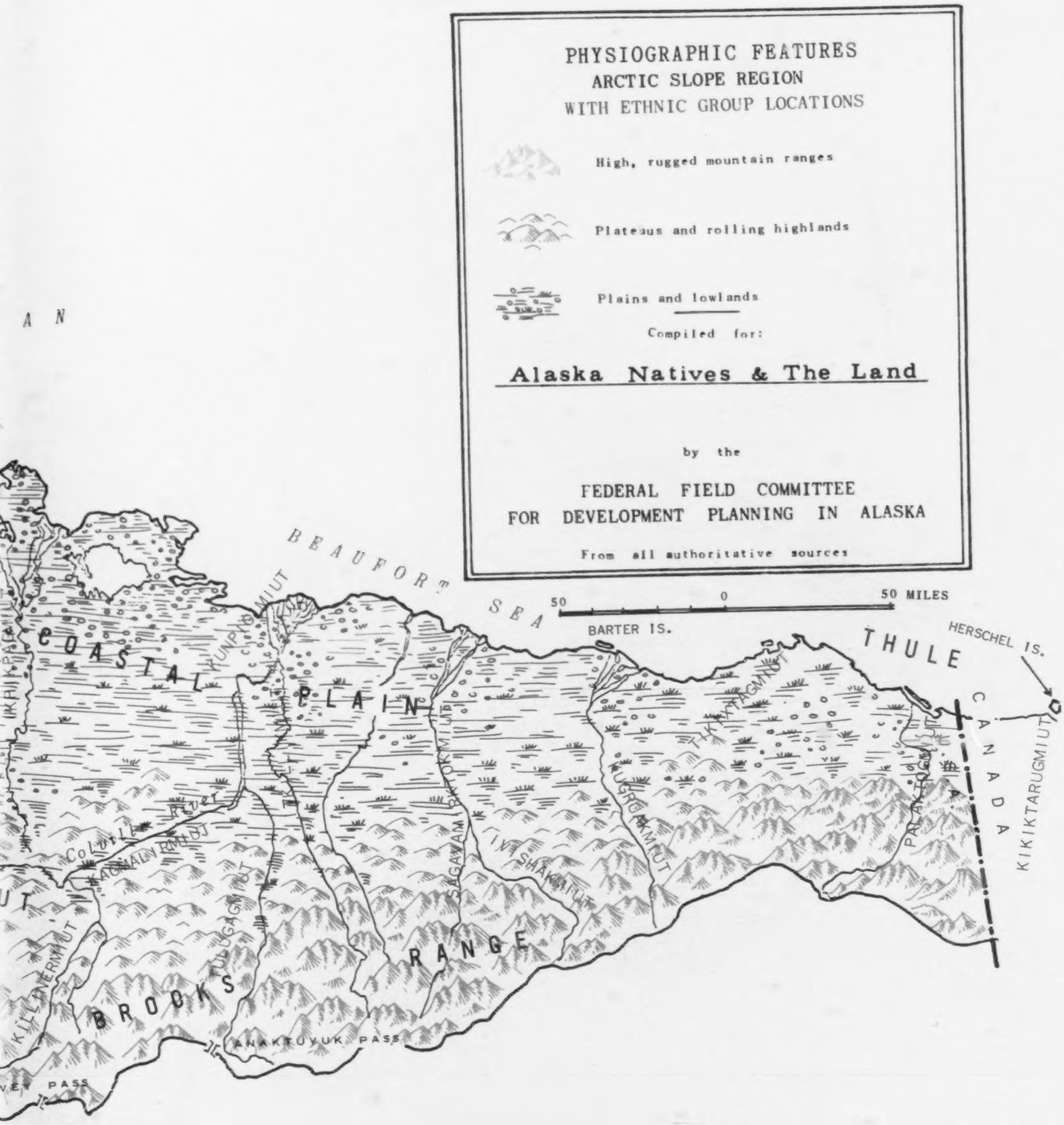
ARCTIC OCEAN
CHUKCHI SEA
TAREMIUT
PT. BARROW
UTKIAVIN
NUVUKMIUT
SIDARUMIUT
ICY CAPE
UTUKAMIUT
KOLUGURMIUT
PT. LAY
KUKPARUNGMIUT
C. LISBURNE
TIKERAMIUT
PT. HOPE
ARCTIC COASTAL
IKPIKPAK
KUNP
Arctic Foothills
KANIANERMIUT
NUNAMIUT
Colville River
KAGMALIRMIUT
TULUGAGM
NUNUTAGMIUT
DE LONG MTS.
KEVALINGAMIUT
HOWARD PASS
KILLINERMIUT
BROOKS
SURVEY PASS

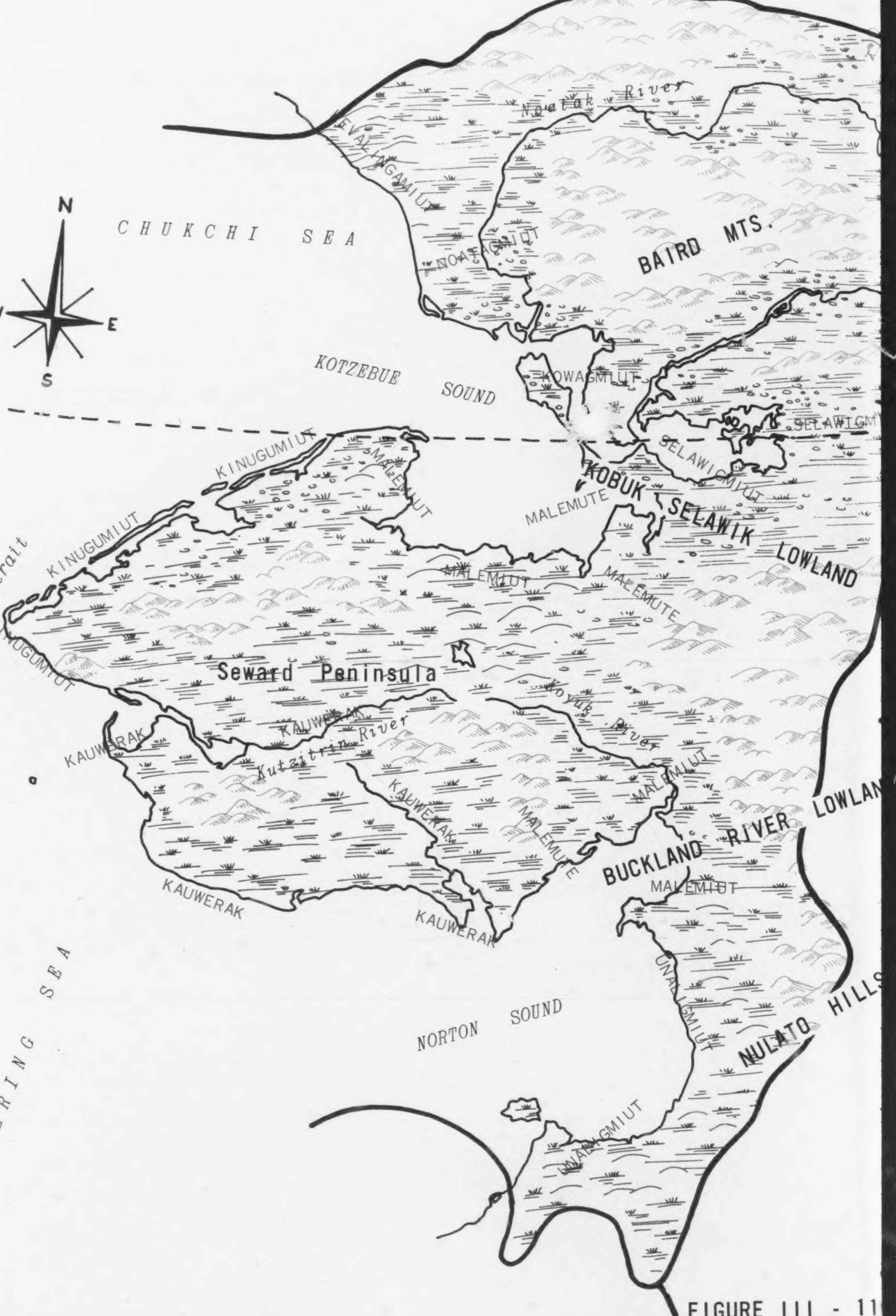
FIGURE III - 10



PHYSIOGRAPHIC FEATURES
ARCTIC SLOPE REGION
WITH ETHNIC GROUP LOCATIONS

High, rugged mountain ranges
Plateaus and rolling highlands
Plains and lowlands
Compiled for:
Alaska Natives & The Land
by the
FEDERAL FIELD COMMITTEE
FOR DEVELOPMENT PLANNING IN ALASKA
From all authoritative sources
50 0 50 MILES
A N
BEAUFORT SEA
BARTER IS.
HERSCHEL IS.
THULE
CANADA
KIKIKTARUGMIUT
PALALTOGMIUT
KUGRUAMIUT
SAGAVAMIRKTOKMIUT
KUNPIGMIUT
COASTAL PLAIN
Colville River
KAGMALIRMIUT
TULUGAGMIUT
KILLINERMIUT
BROOKS RANGE
ANAKTUVUK PASS
PASS

URE III - 10


N
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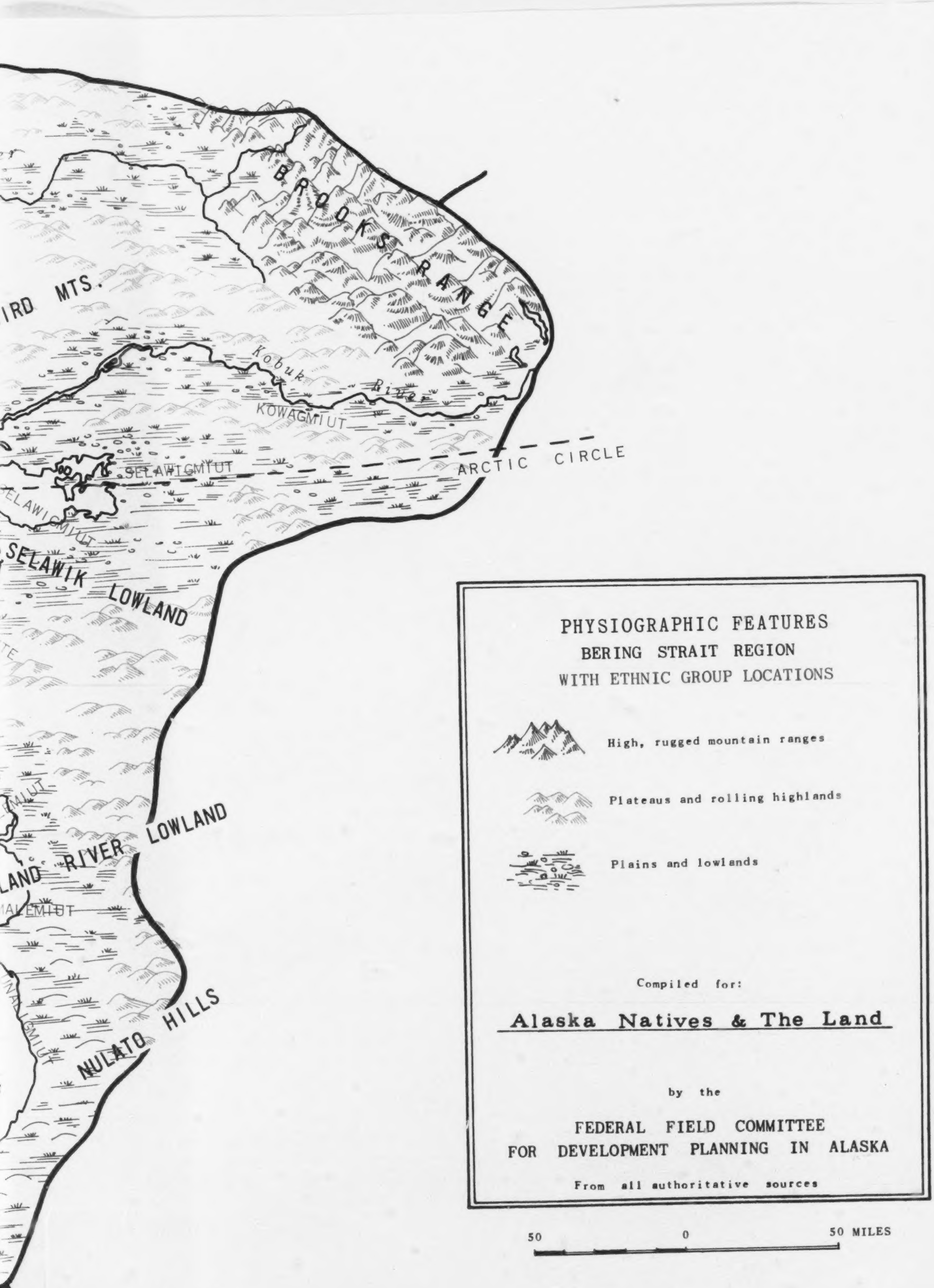
KEVALINGAMIUT
Noatak River
NOATAGMIUT
BAIRD MTS.
KOTZEBUE SOUND
KOWAGMIUT
SELAWIGM
SELAWIGMIUT
KINUGUMIUT
MALEMIUT
KOBUK
SELAWIK
LOWLAND
MALEMUTE
INGUKLIMIUT
Bering Strait
KINUGUMIUT
MALEMIUT
MALEMUTE
KINUGUMIUT
Seward Peninsula
Koyuk River
KAUWERAK
River
Kutzitrin
KAUWERAK
KAUWERAK
MALEMIUT
MALEMUTE
BUCKLAND RIVER LOWLAN
KAUWERAK
KAUWERAK
MALEMIUT
UNALIGMIUT
NORTON SOUND
NULATO HILLS
BERING SEA
UNALIGMIUT

FIGURE III - 11



PHYSIOGRAPHIC FEATURES
BERING STRAIT REGION
WITH ETHNIC GROUP LOCATIONS

BROOKS RANGE
IRD MTS.
Kobuk River
KOWAGMIUT
ARCTIC CIRCLE
SELAWIGMIUT
SELAWIK LOWLAND
RIVER LOWLAND
LAND
MALEMIUT
NULATO HILLS
High, rugged mountain ranges
Plateaus and rolling highlands
Plains and lowlands
50
0
50 MILES

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FOR DEVELOPMENT PLANNING IN ALASKA

From all authoritative sources

FIGURE III - 11

To the south is Norton Sound and Cape Denbigh, another site of ancient man, and on its eastern side the narrow strip of Nulato Hills rising also to the upper reaches of the Unalakleet River to the historic portage over the divide to the Yukon. On the southern side of Norton Sound itself the region ends with inclusion of a small strip of coastal lowland north and east of the Pikmiktalik River drainage.

Finally, to the west in the Bering Strait, is included the small rocky island of Little Diomede.

The Seward Peninsula is a land of extensive uplands, broad convex hills and flat divides rising 500 to 2,000 feet in altitude, indented by sharp "V"-shaped valleys with isolated small groups of rugged glaciated mountains rising above the uplands.

Two rivers divide the Peninsula nearly in half along an east-west axis. Both rising just south of Imuruk Lake in the Bendeleben Mountains, the Koyuk River flows eastward and south to its mouth at the extreme northern end of Norton Bay while the larger Kuzitrin River flows westward to the Imuruk Basin. Together they have served as a highway for early man, Eskimo traders, early European explorers and men haunted by the gold fever of the early 1900's.

The mountain systems in the northwest part of the region form a "backstop" for the maritime weather influences, originating in the Bering Sea, which have not already been deflected by the mountains of the Seward Peninsula. Similarly, they also localize the maritime climate produced by Kotzebue Sound and Kobuk Lake (Hotham Inlet) when the waters are ice free--generally late May to late October.

During the ice-free summer months in the Kotzebue area, cloudy skies prevail, fog occurs, daily temperatures are relatively uniform (with mean readings in the low 20's [°F] in May and October and in the low 50's [°F] in July and August), relative humidity is high and westerly winds predominate. During this period this pattern is only altered by occasional storm systems which overcome local conditions.

With the approach of winter and the reformation of ice, climatic characteristics are more those of the interior, but not as severe as might be expected just above the Arctic Circle. Here in the Kotzebue Sound area mean temperatures vary for the winter months from 8° F. to -5° F. due to the moderating effect of storm systems and the often relatively ice-free Arctic Ocean.

Progressively south and west from Kotzebue toward Nome, precipitation increases and temperatures are more moderate, until at Nome the mean annual temperatures show an increase of 5° F. and precipitation is nearly double (17.8") that of Kotzebue (9.3").

Generally throughout the region average snow falls are fifty to sixty inches. The snow itself is little trouble to man in the area except when the not uncommon high winds produce blowing snow conditions, often complete with whiteouts, greatly hindering transportation.

Southward toward the bights of Norton Sound the temperature is still more moderate and man has more latitude in dealing with his environment. But, northwestward from Nome--toward King Island, Wales, Shishmaref and Little Diomede--the sea climate, the fog and the shifting ice pack effectively require man to live in closer basic harmony with the elements in order to survive.

Ethnic Identification

The Eskimo of this region were all culturally similar although their settlement and environmental livelihood patterns had some distinct differences, as will be noted later. The essential and major ethnic groups of the region follow. All linguistically are of the northern dialect (Inupik) except the Unaligmiut who are primarily Yupik speakers. Figure III - 11 illustrates the location of Bering Strait ethnic groups and sub-groups in relation to physiography.

... Kevalingamiut, Noatagmiut, Nunatagmiut, Kowagmiut, Selawigmiut, Malemiut, Kauwerak and related tribes, Kingikmiut, Inguklimiut, Unaligmiut, Tapkakmiut.

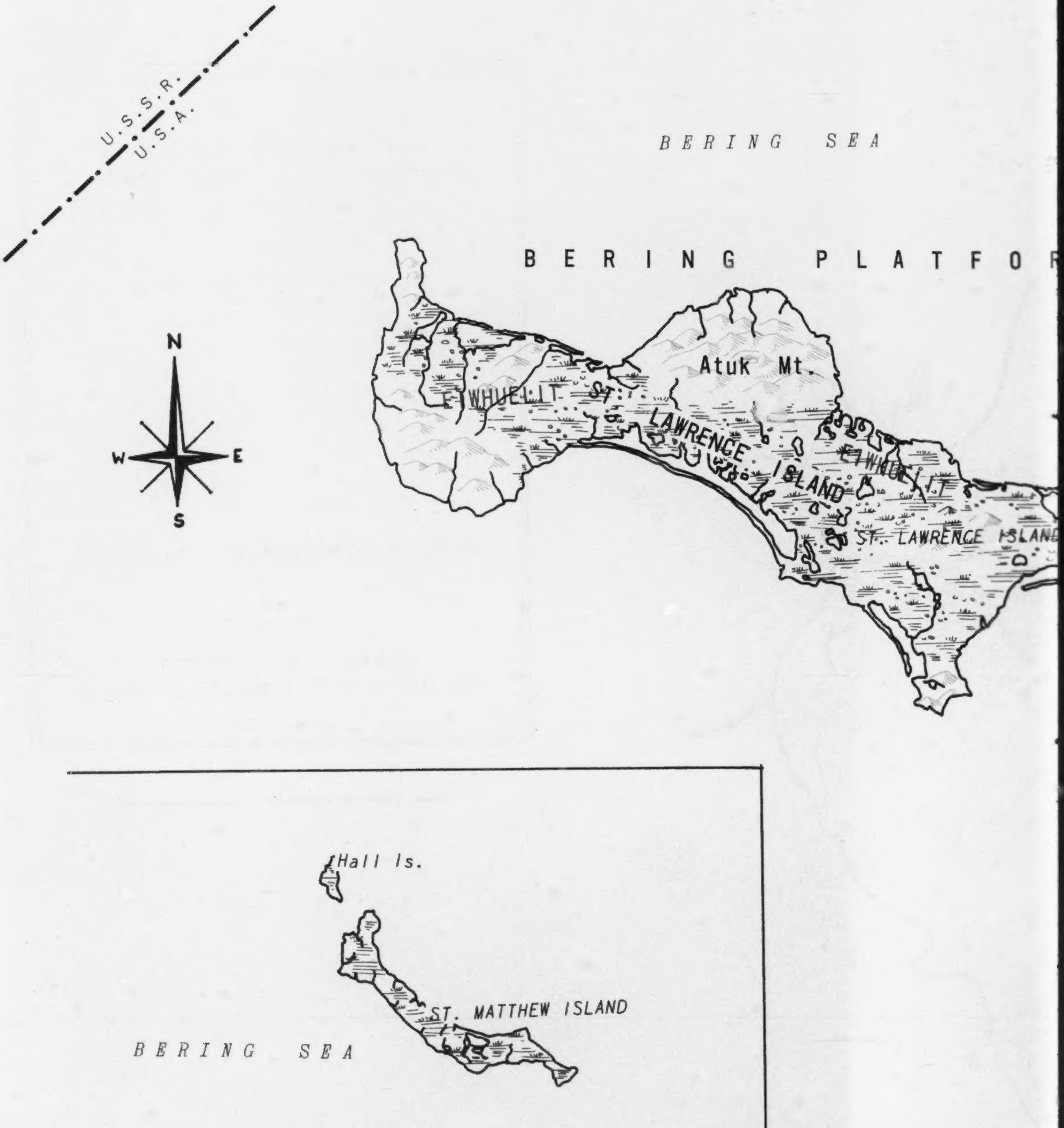
BERING SEA REGION
(1.3 million acres)

Physiographic and Climatic Description

The region includes St. Lawrence Island and St. Mathew Island of the Bering Platform. These two islands rise abruptly from the smooth submarine plain known as the Bering Platform. Except for comment in connection with wildlife resources later in this report, there is no concern with one island, St. Mathews, a rocky, fogbound, uninhabited place set aside as part of the National Wildlife Refuge System.

The island of concern here is St. Lawrence Island, about 104 miles long and averaging about twenty miles wide. Located just south of the Bering Strait between 168° 45' and 171° 50' west longitude and between 63° 00' and 63° 38' north latitude, it is within sight of the Siberian mainland just 36 miles away.

The island's bedrock plain, about 100 feet above the sea, is covered with hundreds of lakes and low, swampy tundra except for isolated mountain groups rising to 1,000 to 1,500 feet. On the north shore the dominant Atuk Mountain, a many-vented volcano, looms to 2,207 feet behind one of the island's three main communities, Savoonga.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ST. LAWRENCE ISLAND
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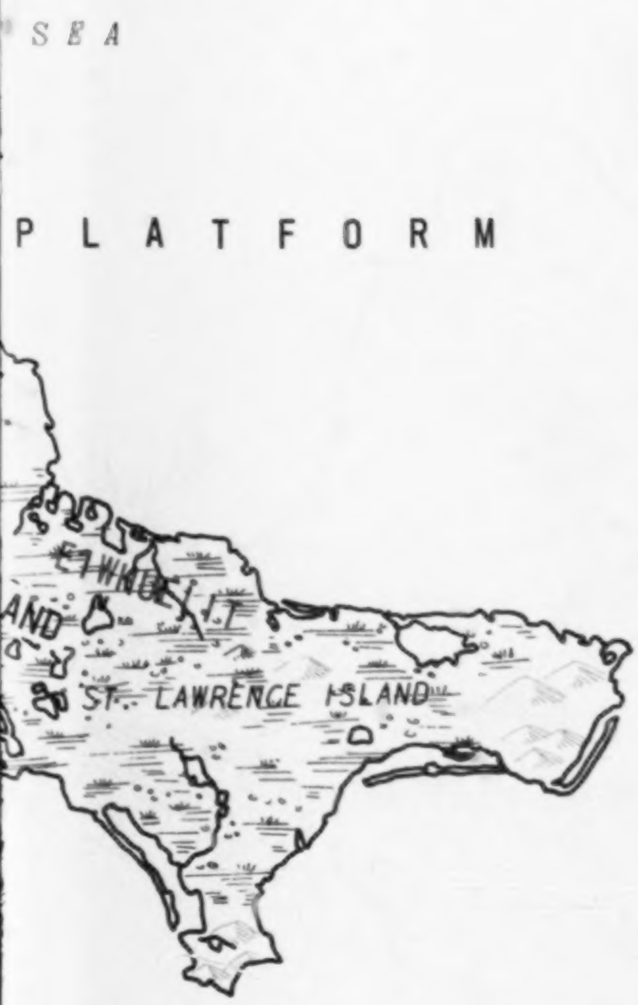
BERING SEA

FIG. III – 12


SEA
PLATFORM
ST. LAWRENCE ISLAND

PHYSIOGRAPHIC FEATURES
BERING SEA REGION
WITH ETHNIC GROUP LOCATIONS

Plateaus and rolling highlands

Plains and lowlands

Compiled for:

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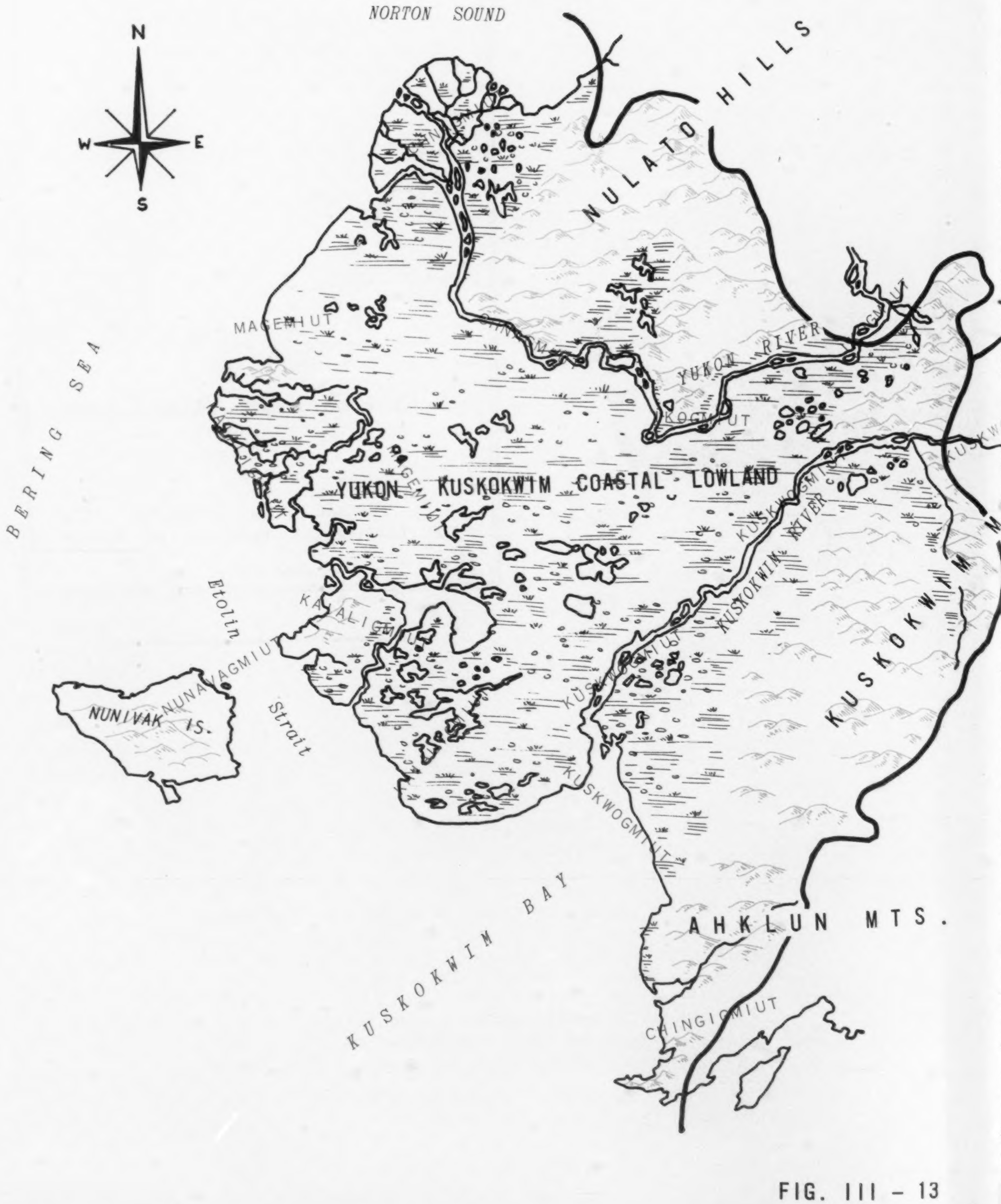
FOR DEVELOPMENT PLANNING IN ALASKA

From all authoritative sources

0 25 50 MILES

FIG. III - 12


NORTON SOUND
N
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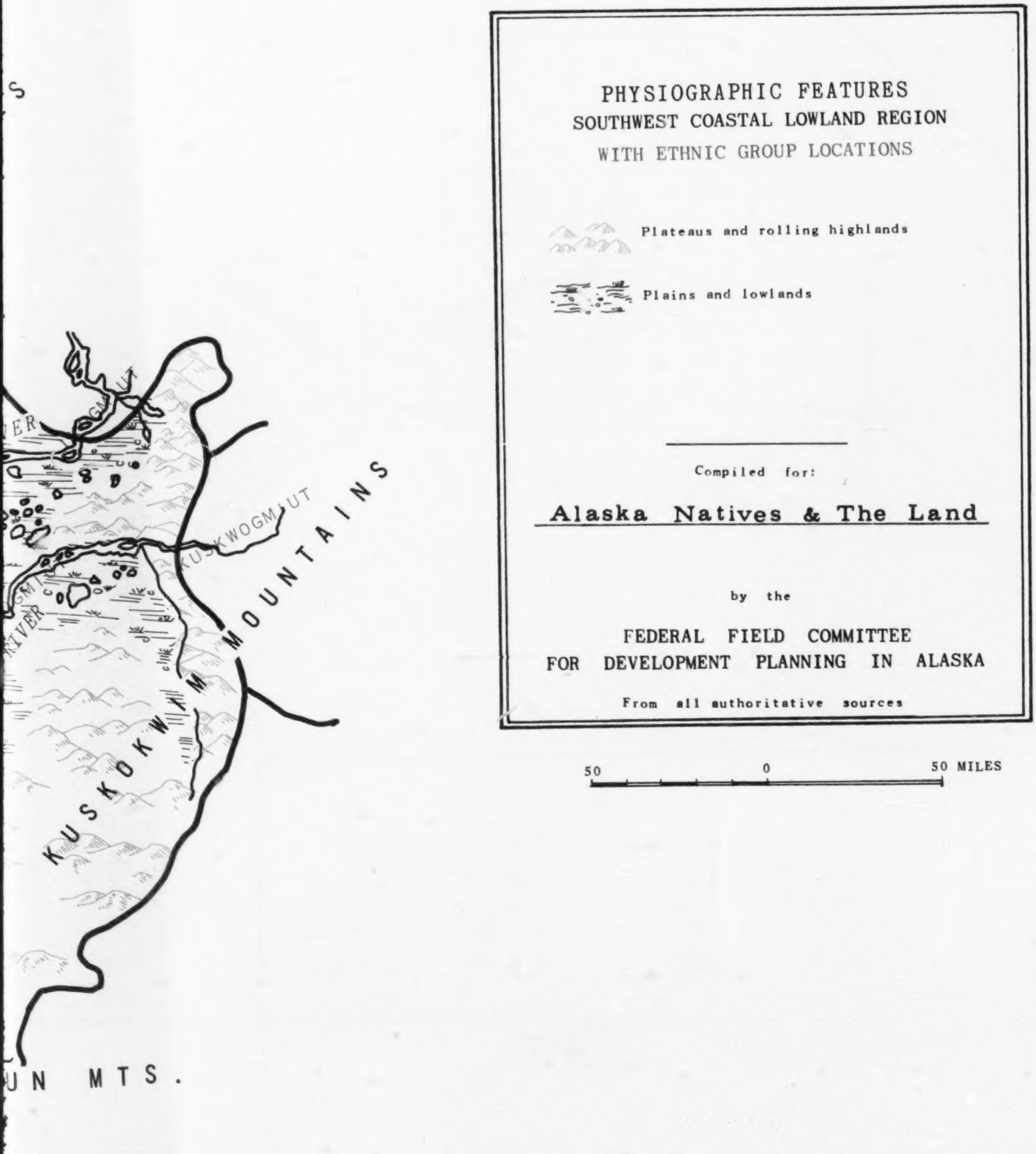
NULATO HILLS
MAGEMIUT
BERING SEA
YUKON RIVER
KOGMIUT
YUKON KUSKOKWIM COASTAL LOWLAND
KUSKOKWIM RIVER
KUSKWOGMIUT
KUSKOKWIM M
Etolin Strait
KAIALIGMIUT
NUNAVAGMIUT
NUNIVAK IS.
KUSKOKWIM BAY
AHKLUN MTS.
CHINGIGMIUT

FIG. III - 13



S
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KUSKOKWIM MOUNTAINS
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Plateaus and rolling highlands
Plains and lowlands
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PHYSIOGRAPHIC FEATURES
SOUTHWEST COASTAL LOWLAND REGION
WITH ETHNIC GROUP LOCATIONS

Compiled for:

Alaska Natives & The Land

by the

FEDERAL FIELD COMMITTEE
FOR DEVELOPMENT PLANNING IN ALASKA

From all authoritative sources

IG. III - 13

The climate of the island is severe. St. Lawrence is a very windy, stormy, foggy place. Temperatures are moderately low, with an annual yearly mean in the low 20's; but extreme lows are rare due to high surface winds, high incidence of low cloud cover, and the maritime influence of the Bering Sea. Precipitation occurs on about 300 days of the year, and only about 32 days per year have clear sky. Prevailing northeast winds have high velocity, constantly displacing winter snow, and storms with strong winds occur in every month.

The vegetation of the island is subarctic--essentially typical tundra plants--mosses, lichens, grasses, and creeping woody stems.

Ethnic Identification

The people of St. Lawrence Island are Siberian Eskimos whose closest relatives live on the Chukotski Peninsula. They vary from aboriginal Alaskan Eskimo tribes culturally and linguistically. The people of St. Lawrence Island are called Eiwhuelit. Figure III - 12 illustrates topographic relief with ethnic identification.

SOUTHWEST COASTAL LOWLAND REGION
(31.1 million acres)

Physiographic and Climatic Description

The region includes the following physiographic sections and parts: the Yukon-Kuskokwim Lowland, Nelson Island, Nunivak Island, Nulato Hills draining into the Yukon River, Ahklun Mountains and Kilbuck Mountains draining to the Kuskokwim and Kuskokwim Mountains draining to the Kuskokwim.

Two great river systems, the Yukon and the Kuskokwim, have deposited the sediments of a sub-continent to form the vast delta area which, along with its peripheral uplands and Nunivak Island, is here termed the Southwest Coastal Lowland region.

Physiographically, the region contains the Yukon-Kuskokwim Coastal Lowland section, peripheral parts of the Nulato Hills to the north, the Kuskokwim and Ahklun Mountain sections to the south and southeast, plus a small part of the Innoko Lowlands south of Holy Cross--included for ethnographic reasons.

The major and dominant area of this 31.1 million acre region is, of course, the Yukon-Kuskokwim Coastal Lowland. This lowland delta is a triangular, lake-dotted marshy plain traversed by sluggish meandering streams, many of them distributaries or former channels of the Yukon River. Probably thirty to fifty percent is lake surface. The larger of these thaw lakes, many over ten miles in length, have scalloped shorelines, and probably have been formed through the coalescence of several smaller lakes.

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The Yukon River flows along the base of the Nulato Hills and is building a delta into the Bering Sea. The Kuskokwim River, on the other hand, ends in a marine estuary that appears to be a drowned river mouth. Subsidence of adjacent lands is occurring here. These physiographic facts have had interesting settlement ramifications throughout history which continue to the present moment.

In elevation the lowland rises from sea level on the west to heights of 100 to 300 feet on the eastern margin. In the western part low hills of basalt and a few craggy mountains rise from the plain.

Along the estuary of the Kuskokwim and across the Yukon delta there is typical tundra vegetation. Traveling westward up both rivers the vegetation gradually grows more luxuriant, with willows and alders, until spruce enter the plant community about Kalskag on the Kuskokwim.

The climate of the region is affected primarily by the Bering Sea to the west and the Kilbuck-Ahklun mountain ranges to the east and south. These ranges, along with the Aleutians, tend to direct some storms northeastward into the Bering Sea and the lowland country. On such occurances winds in excess of seventy m.p.h. are not uncommon. Maximum velocities accompany northeast winds in winter and southeast winds in summer. During the winter, too, strong southerly winds affected by the Kilbuck and Ahklun ranges produce Chinook conditions, occasionally causing 50° temperature rises in less than 24 hour periods.

The proximity of the region with the sea, however, dominates the mountain influences and may be characterized as more maritime than continental. As a result, daily temperature extremes are modified during most of the year. But in June to July and again in late December, early January continental influences are felt. Temperature extremes caused by this continental dominance range 142°--from -52° in January to 90° in June.

Average temperatures, however, are more moderate than in the interior of Alaska. The growing season lasts about 100 days and is adequate for several crops: cabbages, potatoes, cauliflower, beets, turnips, lettuce and carrots.

Annual precipitation averages nearly nineteen inches. August is the wettest month with an average rate just over four inches. Snowfall averages about sixty inches.

Across the Etolin Strait from the Yukon-Kuskokwim lowland lies Nunivak Island. It is included in this region for reasons of historic ethnography and current political alliance. Physiographically it is quite different from the coastal lowland.

Nunivak Island is one of several islands that are part of the Bering Platform and rise above that submarine plain. It is an island essentially composed of undissected volcanic topography.

Roberts Mountain, at elevation 1675 feet above sea level, is the island's highest point. Generally dome-shaped, the island's higher parts are near its center with small buttes, hills and craters rising above a central plain elevation of about 500 feet. On the west coast the shoreline is more abrupt with bluffs rising from the sea to 100 to 200 feet. On the east the rise to the interior elevations is more gradual, beach bluffs being under 50 feet.

Throughout, the island is tundra-covered and dotted with small lakes. Dune lines in the south support sparse stands of beach rye.

Ethnic Identification

The Eskimo of the Yukon-Kuskokwim delta and up-river to the limits of Eskimo penetration and on Nunivak Island were all culturally similar. All belonged to the Yupik linguistic family. Ethnic groups of the region included the following and are located in Figure III - 13 in relationship to geography and physiography.

... Chnagmiut, Ikogmiut, Magemiut, Kaialigmiut, Nunivagmiut, Kuskwogmiut, Chingigmiut.

KOYUKUK-LOWER YUKON REGION
(46.5 million acres)

Physiographic and Climatic Description

This region includes the following physiographic sections and parts: Kanuti Flats, Kokrine-Hodzana Highlands draining to the Koyukuk, Indian River Upland, Pah River section, Koyukuk Flats, Nowitna Lowland draining to the Yukon, Kuskokwim Mountains draining to the Yukon Tozitna-Melozitna Lowland, Nulato Hills draining to the Yukon and Innoko Lowland.

The region is essentially a vast lowland basin of the Kanuti, Koyukuk, Melozitna, Nowitna, Innoko, Idatarod and Yukon Rivers and their tributaries. It is rimmed on the north by the Endicott Mountains of the Brooks Range; on the east by the Ray Mountains and Kokrine-Hodzana Highlands; to the south and southeast by the Kuskokwim Mountain range; and to the west by the Ilivik Mountains, Nulato Hills, Kaltag Mountains, Zane and Lockwood Hills and the Schwatka Mountains.

Characterized by taiga and muskeg-type vegetation, the region is a wilderness of flat flood plains, sloughs, oxbow lakes, meandering belts, marsh, thaw lakes and sinks. Some parts are more than fifty percent lake surface.

The geology of this country is incompletely known and understood. Glaciers are absent but the region is underlain by permafrost, except beneath large lakes, rivers and recently-formed flood plains. Much of these lowlands are covered by water laid and windborne silts. Alluvium deposits are often quite deep.

The Schwatka and Endicott Mountains of the Brooks Range--bounding the region on the north--are the major sources of water run-off supplying the river systems of the Koyukuk and Kanuti. Together with tributary supplies from east and west, these waters swell the Yukon's volume at the junction of the Koyukuk and Yukon. To the south the monotonous, rounded ridge Kuskokwim Mountain Range drains to the Yukon by way of the Nowitna, Innoko, Dishna and the Idatarod Rivers.

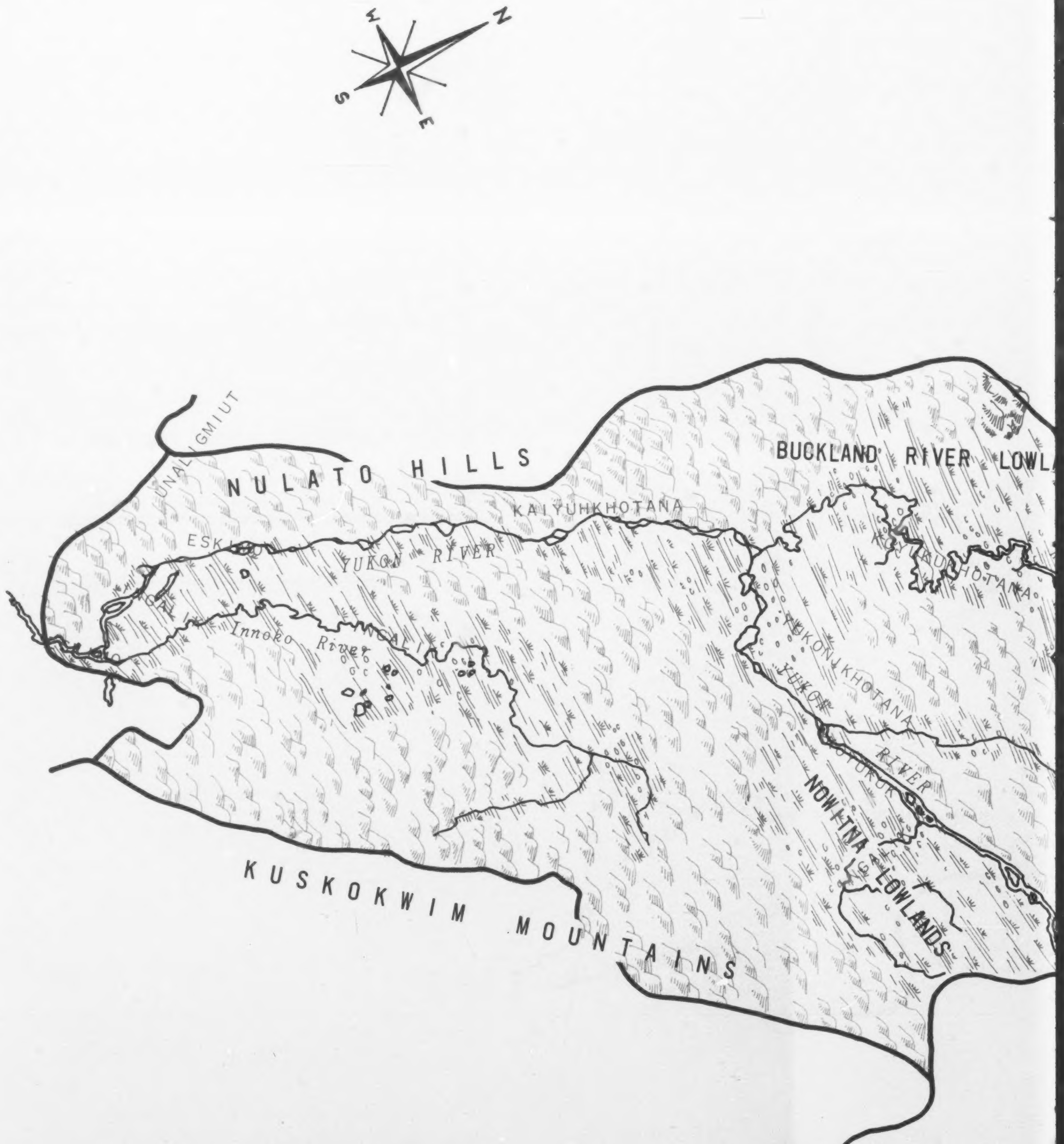
The climate in the northern third of the region is incompletely known due to the lack of data, particularly above 1,000 feet in altitude. But, as might be expected, the temperatures are characteristically continental. A range between extremes exists at Allakalet of 168 degrees. Mean maximum temperatures in the months of June and July are in the 60's; and in the months of December, January, and February from ten below to five above. Minimum averages in comparable months are in the 40's in summer and ten to thirty below in winter. As characteristic of northern latitudes, the coldest minimum temperatures are at lower altitudes.

Annual precipitation amounts appear to range from about ten to seventeen inches with isolated amounts to twenty inches in the area. Prevailing air flow in this part of the region is from a northerly direction--down the south slope of the Brooks Range. Since "down slope" winds are characteristically dry, the light precipitation is explained. Unusually strong winds are rare.

At Galena, centrally located in the region on the Yukon River, periods of intense cold characterizing the Alaska interior are not quite as prolonged or extreme as in central and eastern parts of the state. This central Yukon area is less protected from the severe storms that strike the Bering Sea coastal areas than is the Koyukuk basin to the north, and thus, these storms as they approach Galena are only slightly moderated. Most frequent in the middle and late winter months, they are caused when high pressure areas to the east and south route Aleutian Lows into the Bering Sea away from their usual path into the Gulf of Alaska. Snow, high winds and considerable drifting occur with these cyclonic passages. Another winter phenomenon is ice fog, especially frequent in the morning hours.

About the second or third week in May the Yukon River ice breaks up and a typical ice jam flood hazard often results.

Throughout the lower Yukon region, the growing season averages 95 to 100 days.


W
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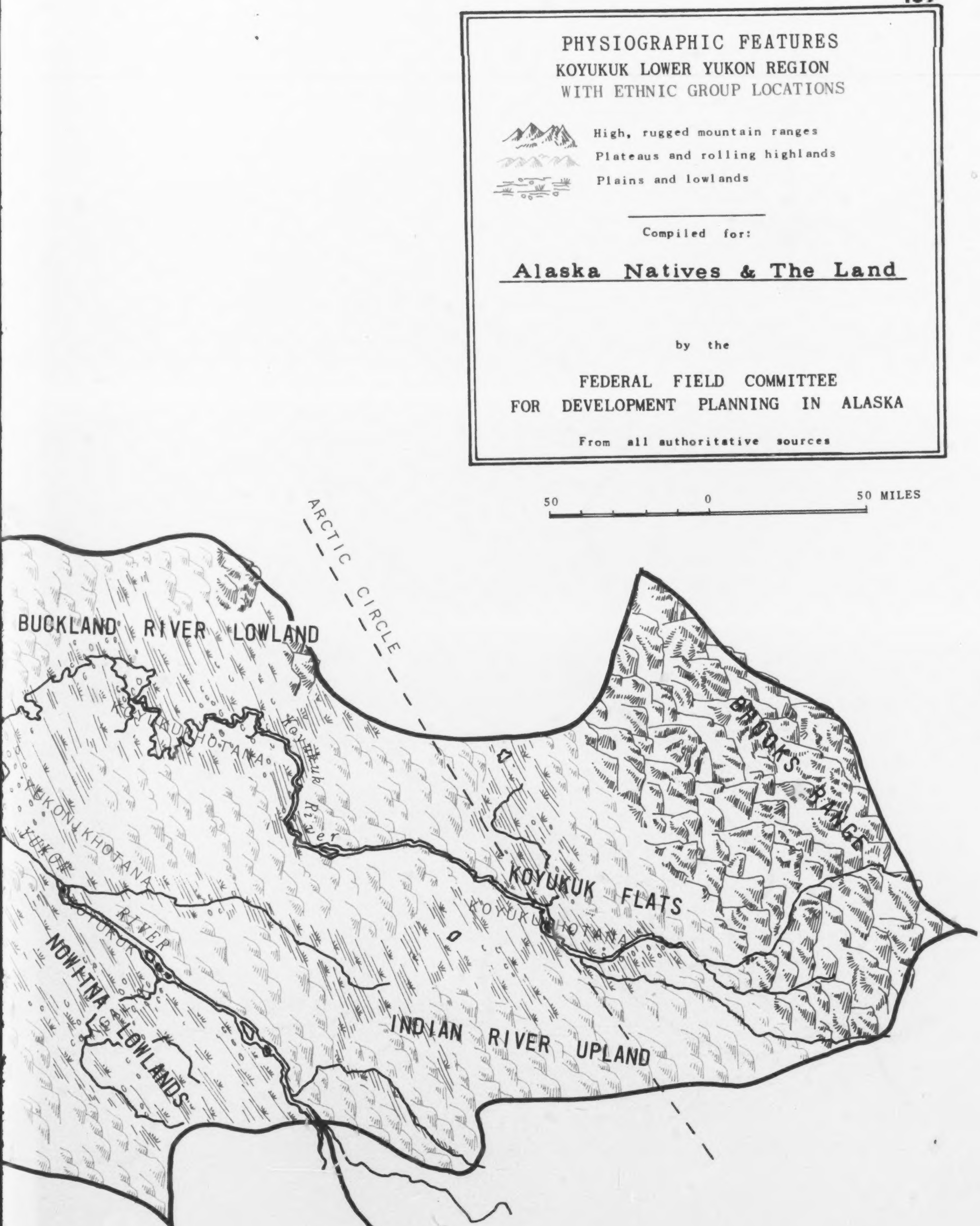
UNALIGMIUT
NULATO HILLS
BUCKLAND RIVER LOWL
KAIYUHKHOTANA
ESKIMO
YUKON RIVER
INGALIK
Innoko River
INGALIK
KOYUKUKHOTANA
YUKONIKHOTANA
YUKON RIVER
KOYUKUK
NOWITNA LOWLANDS
INGALIK
KUSKOKWIM MOUNTAINS

FIG. III - 14



PHYSIOGRAPHIC FEATURES
KOYUKUK LOWER YUKON REGION
WITH ETHNIC GROUP LOCATIONS

Compiled for:
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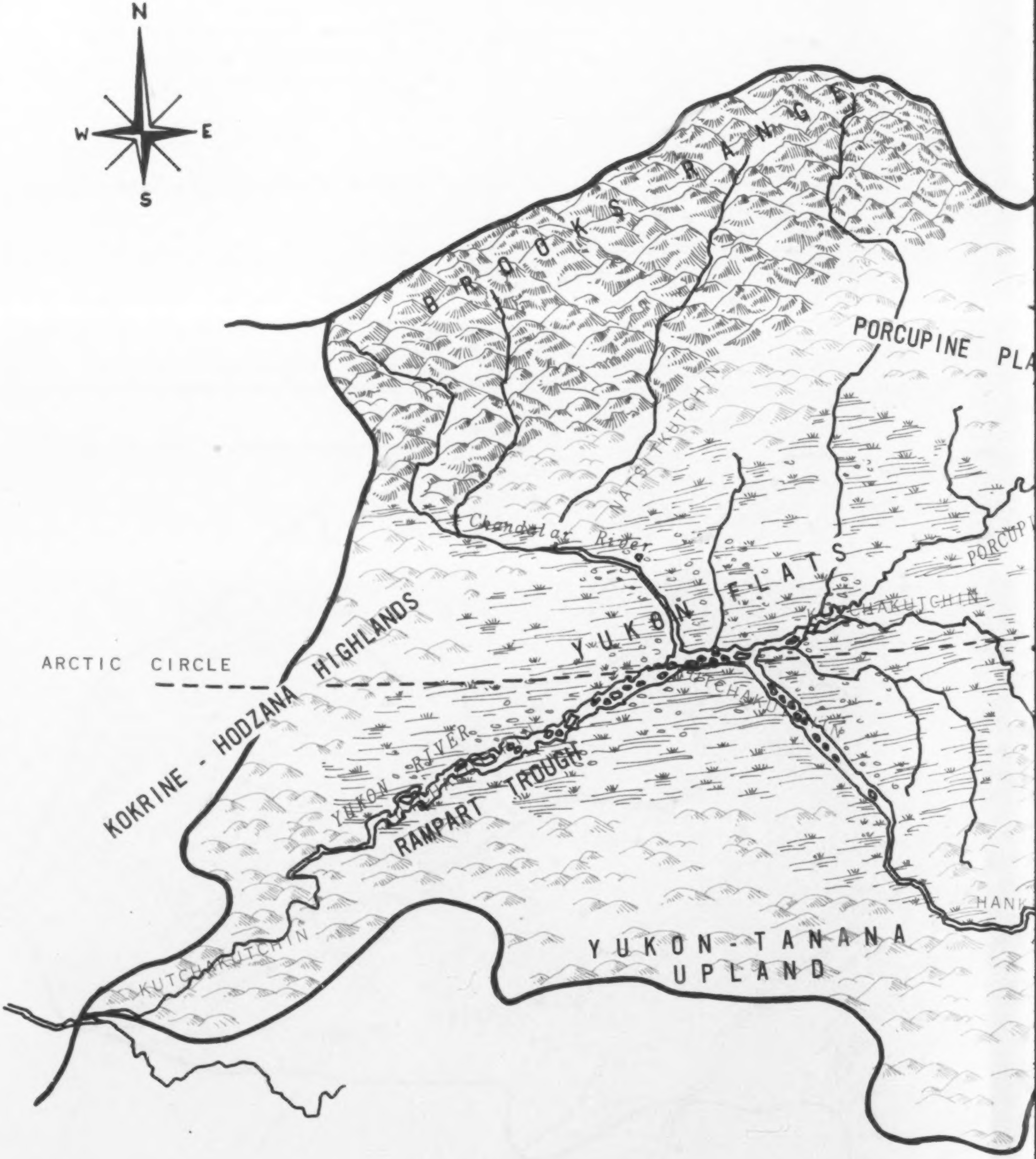
FOR DEVELOPMENT PLANNING IN ALASKA
From all authoritative sources

High, rugged mountain ranges
Plateaus and rolling highlands
Plains and lowlands
50
0
50 MILES
ARCTIC CIRCLE
BUCKLAND RIVER LOWLAND
KOYUKUKHOTANA
Koyukuk River
YUKONIKHOTANA
YUKON RIVER
KOYUKON
NOWITNA LOWLANDS
INGALIK
BROOKS RANGE
KOYUKUK FLATS
KOYUKUKHOTANA
INDIAN RIVER UPLAND

FIG. III - 14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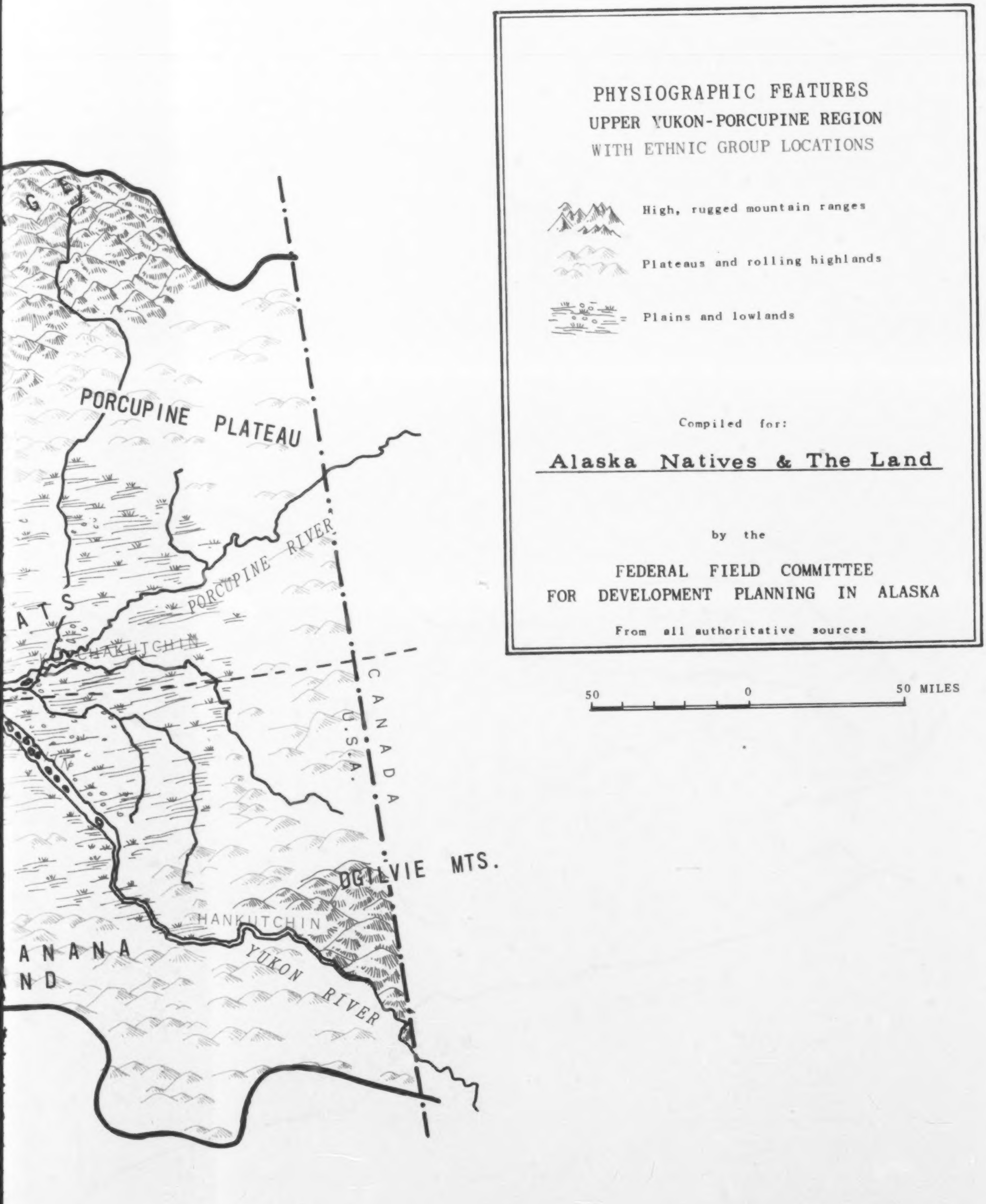
BROOKS RANGE
PORCUPINE PLA
NATSITKUTCHIN
Chandalar River
PORCUP
YUKON FLATS
KUTCHAKUTCHIN
ARCTIC CIRCLE
KOKRINE - HODZANA HIGHLANDS
YUKON RIVER
RAMPART TROUGH
HANK
YUKON - TANANA UPLAND
KUTCHAKUTCHIN

FIG. III - 15


PHYSIOGRAPHIC FEATURES
UPPER YUKON-PORCUPINE REGION
WITH ETHNIC GROUP LOCATIONS
High, rugged mountain ranges
Plateaus and rolling highlands
Plains and lowlands
Compiled for:
Alaska Natives & The Land
by the
FEDERAL FIELD COMMITTEE
FOR DEVELOPMENT PLANNING IN ALASKA
From all authoritative sources
50
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50 MILES
GE
PORCUPINE PLATEAU
PORCUPINE RIVER
ATS
KUTCHAKUTCHIN
CANADA
U.S.A.
OGILVIE MTS.
HANKUTCHIN
YUKON RIVER
ANANA
ND

FIG. III – 15

Ethnic Identification

Athapascan-speaking Indians of the Koyukuk, Ingalik and Tanana peoples have dominated the region since before historic times, and have so remained despite some Eskimo infusion from the Ikogmiut of the Yukon delta, Unaligmiut of Norton Sound and Kowagmiut of the Kobuk River region.

Ethnic groups and sub-groups include:

... *Koyukuk:* Kaiyuhkhotana, Koyukukhotana, Yukonikhotana;

... *Ingalik:* Anvik-Shageluk, Bonasila, Holy Cross;

... *Tanana:* Tatsa, Tozikakat.

Figure III - 14 locates these ethnic groups in relation to physiographic features.

UPPER YUKON-PORCUPINE REGION
(36.7 million acres)

Physiographic and Climatic Description

The physiographic sections and parts within this region include: Yukon Flats, Porcupine Plateau, Ogilvie Mountains, Tintina Valley, Yukon-Tanana Upland draining to the Yukon, the Rampart Trough, Kokrine-Hodzana Highlands draining to the Yukon, eastern part of Ambler-Chandalar Ridge and Lowland, and south slope of eastern Brooks Range.

Although this region is rimmed by mountainous terrain from its apex at the junction of the Yukon and Tanana Rivers westward and north and westward to the Canadian border, the dominant physiographic feature of the region is the marshy, lake-dotted Yukon Flats.

This Flats section rises to altitudes of 300 feet in the west and 600 to 900 feet in the north and east. Gentle, sloping, outwash fans of the Chandalar, Christian and Sheenjek Rivers make up their northern part. The southeastern part of the flats is the broad gentle outwash fan formed by the Yukon River, while other areas are nearly flat flood plains. Boundaries with surrounding uplands and mountains are gradational. Two rivers--the Yukon and a major tributary, the Porcupine--extend dominant influence over the area. The Yukon has a braided section course southeast of the bend at Fort Yukon and a meandering course with many sloughs southwest of Fort Yukon. Tributaries rising in the surrounding uplands tend to have meandering reaches through the flats. Thaw lakes are abundant in the flats and common, along with thaw sinks, in the marginal terraces.

Permafrost underlies most of the flats except for the rivers; glaciers are absent.

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Geologic evidence points to the Yukon Flats as the site of a late Tertiary lake.

The Yukon River enters the Rampart Trough through a narrow, rocky gorge and meanders gently through a narrow flood plain. The Rampart Trough is incised 500 to 2,500 feet below highlands on either side, having been eroded along a tightly-folded belt of soft coal-bearing rocks of Tertiary age.

To the north of the trough the basin is initially formed by the Kokrine-Hodzana Highlands--even-topped rounded ridges rising from 2,000 to 4,000 feet in altitude and occasionally surmounted by more rugged mountain groups.

North of these highlands and the flats, the Porcupine Plateau slopes upward towards the Brooks Range, the northern extension of the Rocky Mountain system. The Brooks Range within this region is a wilderness of rugged, glaciated, east-trending ridges rising from 4,000 to 6,000 feet in altitude with few lakes.

The Chandalar, Sheenjek and Coleen Rivers rise in the Brooks Range, then flow south across the Porcupine Plateau to the Porcupine and Yukon.

The eastern boundary of the region is the Canadian border, near which rise the Ogilvie Mountains thrusting sharply and precipitously upward to 5,000 feet in altitude. Drainage from these mountains to the Yukon is by way of Kandik, Nation and Tatonduk Rivers.

The Yukon-Tanana Uplands form a southeastern and southern boundary to the region. These uplands, characterized by rounded, even-topped ridges with gentle slopes, are the Alaska equivalent of the Klondike Plateau in the Yukon Territory. Surmounted in places by compact rugged mountain groups 4,000 to 5,000 feet in altitude (the White and Crazy Mountains), they drain south to the Tanana River and north to the Yukon through irregular divides.

The region experiences a typical Arctic continental climate, severe winters and warm summers. After freeze-up of the rivers and marshes, the region is a source for very cold, continental arctic air. Extended periods of fifty to sixty degrees below zero temperature are common and 75 below has been recorded. Summers are warm with temperatures reaching the 80's each year and occasionally the 90's. Despite high summer temperatures, however, diurnal variations can be extreme; freezing temperatures have been experienced in each month of the year.

The continental climate provides most of the precipitation within the region in the normal form of convection showers.

The average snowfall each winter is about 45 inches. Due to extremely cold temperatures, accumulations on the ground approach this average as well.

Climatic factors, together with length of daylight phenomenon, cause abrupt biotic community responses. In response to air and soil temperature rises in June and declines in August, plant growth, flowering and fruiting occur in an extremely rapid manner.

Ethnic Identification

This interior land of climatic extremes was historically, and is today, occupied by several tribes of the Kutchin, Athapaskan-speaking Indians.

Kutchin ethnic sub-groups include:

... Kutchakutchin, Natsitkutchin, Hankutchin (or Han), Vuntakutchin, Tranjikkutchin.

Figure III - 15 locates these ethnic sub-groups in relation to physiography.

TANANA REGION
(32.0 million acres)

Physiographic and Climatic Description

The region consists of the following physiographic sections and parts: The Yukon-Tanana Upland draining to the Tanana, the Northway-Tanacross Lowland, eastern Alaska Range draining to the Tanana, the Northern Foothills, Tanana-Kuskokwim Lowlands draining to the Tanana, the Tozitna-Melozitna Lowland draining to the Tanana, and the Nowitna Lowland draining to the Tanana.

Dominating this region, particularly insofar as human occupancy is concerned, is the Tanana River, a major tributary of the Yukon.

Below and north of its source in the glaciers and slopes of the Wrangell, Mentasta and Nutzotin Mountains, the Tanana drains the Northway-Tanacross Lowland. Here deposits of glacial outwash have pushed the Tanana against the north side of the lowland. This lowland may have been captured in Pleistocene times from the Yukon for the drainage divide of that river is only two to five miles north and east of the Tanana, nearly straddling the United States-Canada border.

There are no glaciers in the lowland, but discontinuous permafrost is present. Thaw lakes abound in areas of fine alluvium and several large lakes abutting the surrounding upland also exist possibly caused by the alluviation of the lowland.

As the Tanana flows towards a confluence with the Yukon, its valley is compressed between the Clearwater Mountains and the Northern Foothills of the Alaska Range before it enters the broad depression of the Tanana-Kuskokwim Lowland, bordering the Alaska Range on the north.

Here coalescing outwash fans from the Alaska Range slope twenty to fifty feet per mile to the floodplains of the lowland. Here, too, the central "trough" of Alaska, through the Intermontane Plateau physiographic division of the state ends with abutments upon the Yukon-Tanana Upland and its White and Crazy Mountains.

The massive Alaska Range to the south and west of the region effectively shelters the Tanana valley from nearly all maritime influences. Consequently, the area has a definite continental climate, conditioned in large measure by the ready response of the land mass to solar heat variations throughout the year.

In the summer months of June to July, the sun is above the horizon eighteen to 21 hours each day, and during this period, average maximum daily temperatures reach the lower 70's, with extremes to 90 degrees or more. Conversely, from November to March, when sunshine ranges from ten to less than four hours per day, lower temperatures are normally regularly below zero with extremes at or near sixty degrees below zero.

The upland surrounding the valley also tends to aid the settling of cold air in the lowland.

Ice fog and smoke conditions frequently occur with extremely low temperatures and air inversion situations.

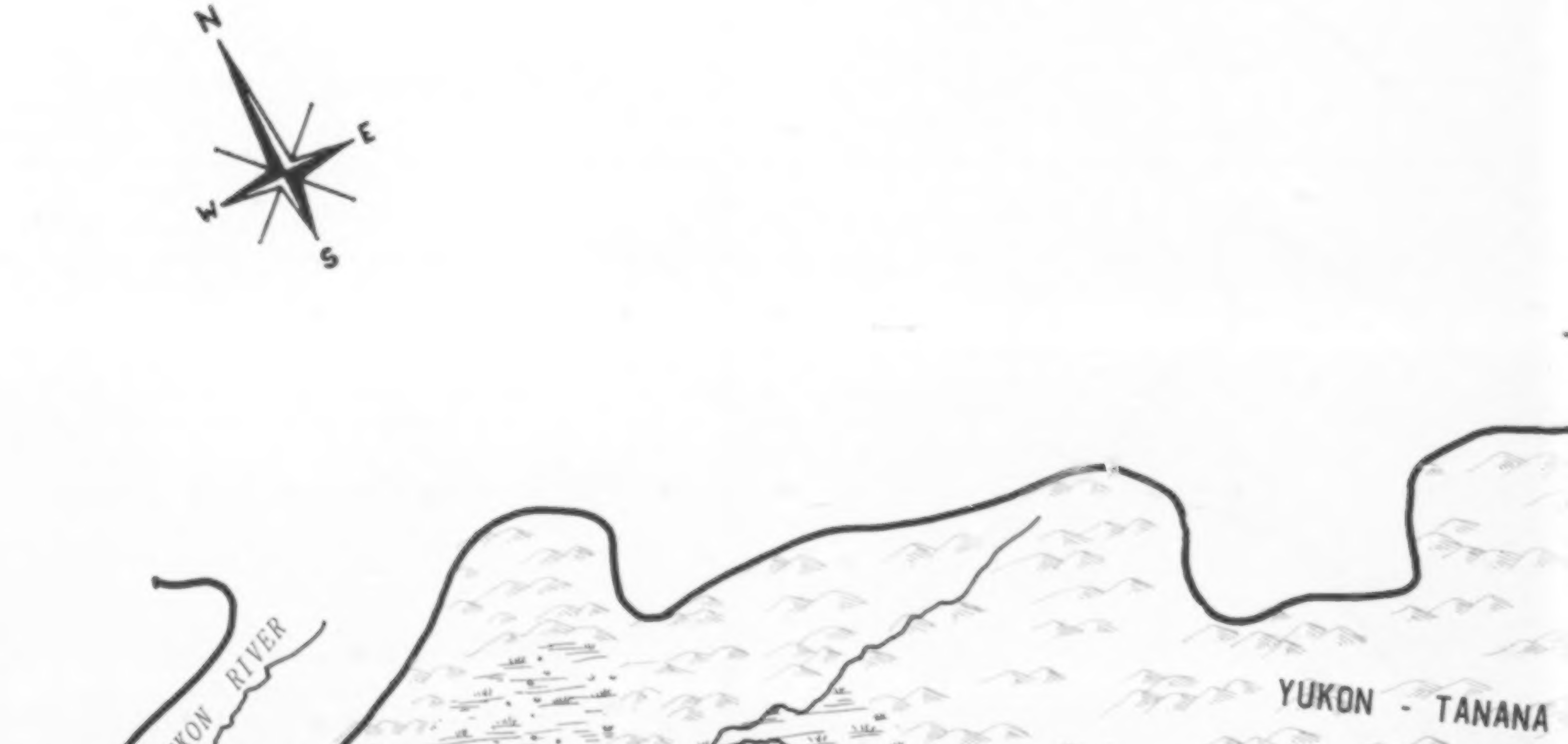
Precipitation in the region is light, averaging about twelve inches per year. Growing season moisture begins with light showers in May and builds up to a maximum in August. This is followed by a noticeable decline to December. Snowfall reaches a maximum in January with the total fall of February and March about half of that realized in January.

The growing season averages about 100 days between a last killing freeze about May 21st and a first fall freeze about August 30th. The Tanana Valley has the best chance of any Alaska area for the maturation of grain crops.

Ice on the river sloughs will generally support a man's weight by late October and break-up usually occurs about the first week in May.

Ethnic Identification

The Indians of the region are of the Athapascan linguistic stock. In a region of rather sparse populations in aboriginal times, ethnic groups were:


N
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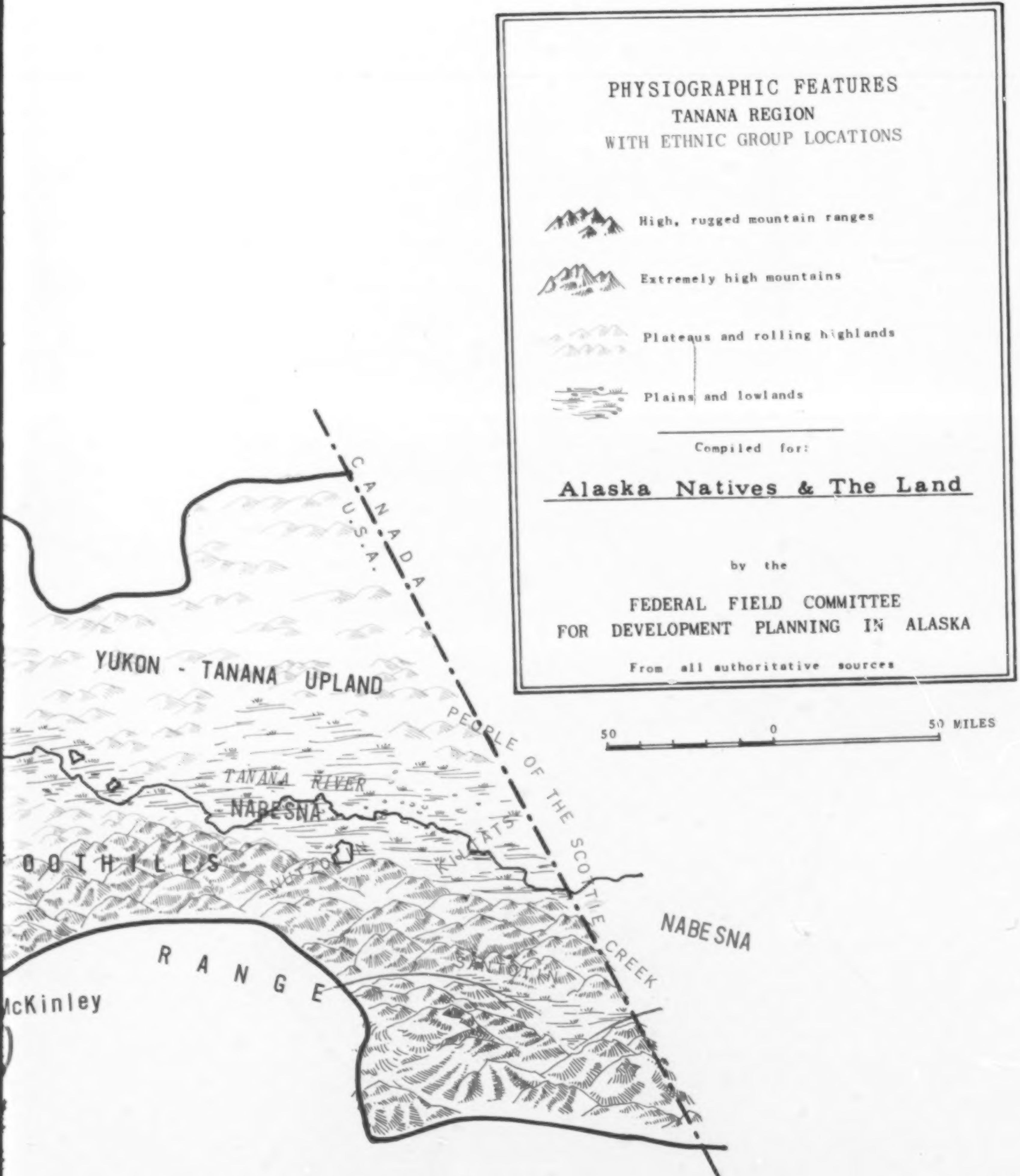
YUKON RIVER
TANANA
TANANA RIVER
TANANA
NOWITNA LOWLAND
YUKON - TANANA
TANANA
NABES
NORTHERN FOOTHILLS
ALASKA RANG
Mt. McKinley

FIG. III - 16



PHYSIOGRAPHIC FEATURES
TANANA REGION
WITH ETHNIC GROUP LOCATIONS

Compiled for:

Alaska Natives & The Land

by the

FEDERAL FIELD COMMITTEE
FOR DEVELOPMENT PLANNING IN ALASKA

From all authoritative sources

High, rugged mountain ranges
Extremely high mountains
Plateaus and rolling highlands
Plains and lowlands
50
0
50 MILES
CANADA
U.S.A.
YUKON - TANANA UPLAND
TANANA RIVER
NABESNA
FOOTHILLS
NUTZOTIN
KIRKATS
PEOPLE OF THE SCOTTIE CREEK
NABESNA
RANGE
SALCHOT
McKinley

FIG. III - 16

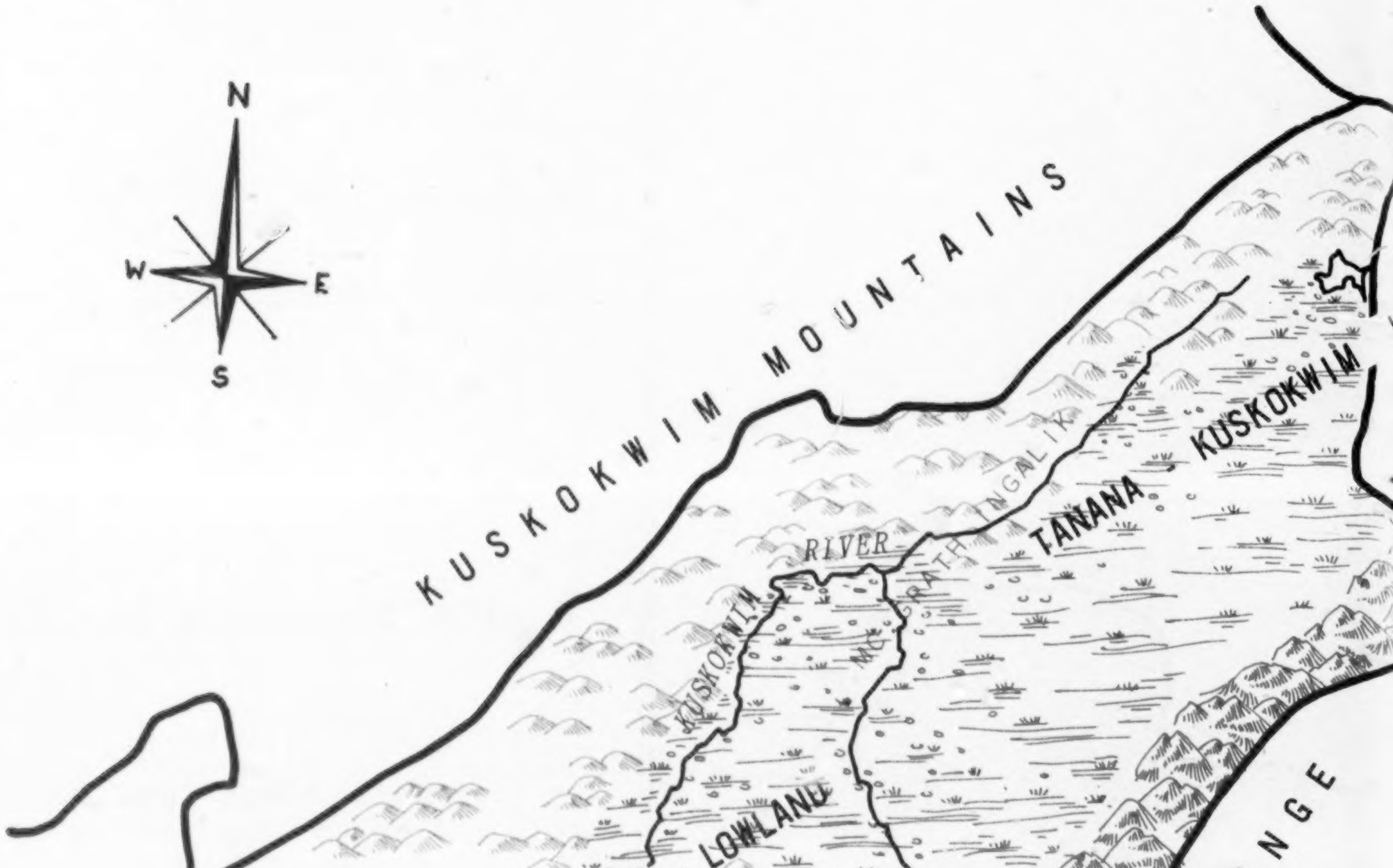
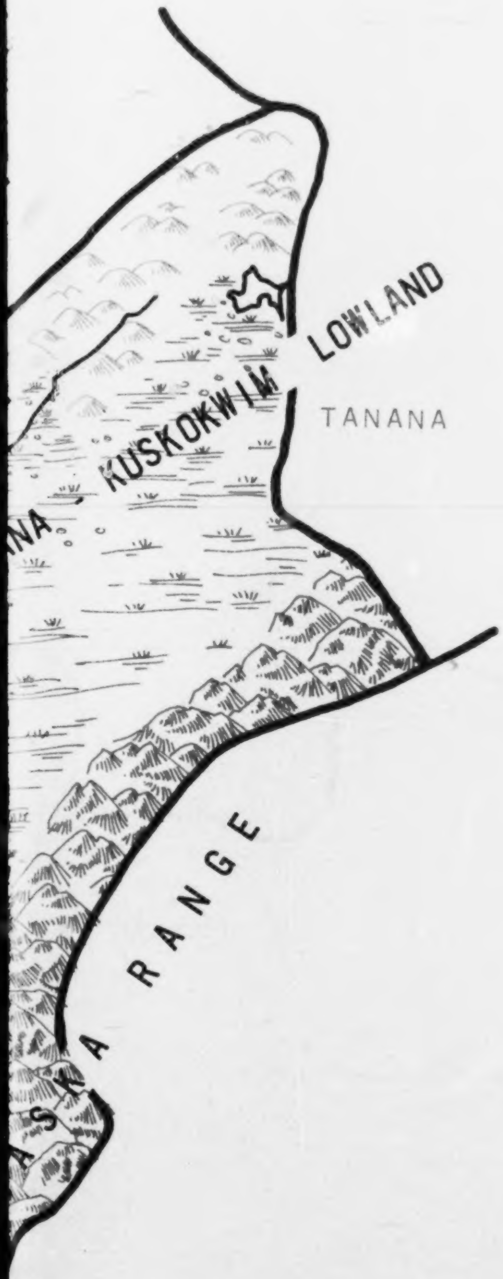

N
W
E
S
KUSKOKWIM MOUNTAINS
KUSKOKWIM
TANANA
INGALIK
McGRATH
RIVER
KUSKOKWIM
HOLITNA LOWLAND
INGALIK
Stony River
ALASKA RANGE
ESKIMO
TANAINA
NUSHAGAK - BIG RIVER HILLS

FIG. III - 1


NA KUSKOKWIM LOWLAND
TANANA
ASKA RANGE

PHYSIOGRAPHIC FEATURES
UPPER KUSKOKWIM REGION
WITH ETHNIC GROUP LOCATIONS

High, rugged mountain ranges

Plateaus and rolling highlands

Plains and lowlands

Compiled for:

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FOR DEVELOPMENT PLANNING IN ALASKA

From all authoritative sources

50 0 50 MILES

FIG. III - 17

4

... *Tanana:* Clatchotin, Huntlatin, Nukluktana, Tolwatin, Tutlut, Weare.

... *Nabesna:* Tetlin Lake (or Nutzotin), Nabesna (or Khiltats), Chisana River (or Santotin), Scottie Creek.

Figure III - 16 illustrates ethnic group location in relation to physiography.

UPPER KUSKOKWIM REGION
(21.5 million acres)

Physiographic and Climatic Description

The region of the Upper Kuskokwim includes the following physiographic sections and parts: Kuskokwim Mountains draining to the Kuskokwim, Tanana-Kuskokwim Lowland draining to the Kuskokwim, the Alaska Range draining to the Kuskokwim, the Nushagak-Big River Hills draining to the Kuskokwim, and the Holitna Lowland.

The focus of this country is the Kuskokwim River itself. Here it generally flows through a wide, flat, forested alluvial plain, dotted occasionally by low, rolling hills. Several major rivers and streams: the Holitna, Hoholitna, Stony, Swift, Big, Windy Fork, South Fork, together with a myriad of lesser tributaries, flow northward draining the Aleutian and Alaskan ranges until the foothills of the Kuskokwim Mountains is reached and confluence achieved with the main stem of the Kuskokwim.

In the northeast corner of the region is the Chedotlothina Glacier. From this source and other mountain glaciers, southeast along the Alaska Range to Rainy Pass and beyond towards Merrill Pass and merger with the Aleutian Range, flow the long, silty, braided streams which have formed the alluvial bed of the main river.

Conversely, the streams entering the main stem from the Kuskokwim Mountains, bounding the region on the northwest, are fast and meandering, flowing through fault controlled valleys.

Where the main Kuskokwim crosses the mountains, it traverses through a gorge 100 to 400 feet deep incased in an older valley about 1,000 feet deep and two to eight miles wide.

The Alaska Range effectively isolates the region today from the populous Cook Inlet region just as in earlier times it prevented much aboriginal contact in this direction. Instead, access into the region came historically up the Kuskokwim, from the Tanana to the Lake Minchumina area, from the Yukon drainage across the lesser Kuskokwim Mountains and from the Lake Iliamna-Lake Clark region into the Lime Hills.

The southern boundary of the region is along the Nushagak-Big River Hills. This is a land of fragile soils and sparse and poor biotic communities. The local name of Hungry Hills in the Stony River country and the extremely low human population are illustrative of this region's biological carrying capacity.

Situated as it is--an interior basin surrounded by mountain ranges and protective hills--the region is climatically a portion of the sheltered continental interior.

Characteristically, continental climate is most pronounced in the winter season when precipitation is relatively light, temperatures are quite cold and north-northwesterly winds prevail.

Despite little precipitation in the winter months, accumulated snowfall is usually quite large, averaging over 85 inches, due to the general dry nature of the snow.

Spring is the driest season, with clear mild weather lasting into June.

Over forty percent of the year's precipitation normally occurs during July, August and September, representing a more abundant fall than that received farther in the interior and on the average totalling 7+ inches of a seventeen inch yearly amount. This is caused partly by topographic and partly by maritime influences brought in by prevailing southerly winds traveling over the lowland valley areas to the southward.

Break-up of the Kuskokwim occurs in mid-May and ground is thawed enough for cultivation (minimal as it is) by the first of June. The growing season is approximately 120 days, with killing frosts terminating in mid-May and beginning again in mid-September.

Summer months are relatively warm for Alaska with average daily maximums in the 60's and rises in the 80's at least fifteen days during the period.

During the winter months, temperatures fall well below zero, normally reaching at least -50 degrees F.

Although long periods of extremely low temperatures are experienced (five to ten days or more), skies are clear and atmospheric pressures high, and ice fog common in the colder periods. A normal winter is also broken by one- or two-day thaws with temperatures in the 40's several times during the season.

Ethnic Identification

This was historically a region of sparse aboriginal habitation. It is still sparsely populated today. The region was one of ethnic penetration from four directions:

- ... Kuskwogmiut Eskimo - up the Kuskokwim;
- ... Ingalik - from the lower Yukon across the lower Kuskokwim Mountains and up the Kuskokwim forming two ethnic sub-groups--the Holy Cross-Georgetown Ingalik and the McGrath Ingalik;
- ... Tanana - from the Tanana River in towards Lake Minchumina--the Minchumina Lake sub-group; and
- ... Tanaina - from Lake Iliamna-Lake Clark into the Lime Hills--the Lime Hills sub-group.

Figure III - 17 illustrates the location of these ethnic groups and sub-groups in relation to physiographic features.

BRISTOL BAY REGION
(17.0 million acres)

Physiographic and Climatic Description

The physiographic sections and parts of this region include: Ahklun Mountains draining to Bristol Bay, Nushagak-Big River Hills draining to Bristol Bay, west half of Iliamna Lake, Nushagak-Bristol Bay Lowland, and Aleutian Range draining into Bristol Bay southwest to Mother Goose Lake drainage.

Surrounding the bight of Bristol Bay, pincerlike, the region is dominated by two mountain systems--the Ahklun Mountains to the north and west and the Aleutian Range to the southeast. These two mountain systems, together with the Nushagak-Big River Hills to the northeast, form the catchment basin and watershed for the tremendously valuable river and lake systems that are the nursery grounds of the Bristol Bay salmon fishery.

The rugged, steep-walled, craggy Ahklun Mountains, of heavily glaciated and deformed sedentary and volcanic origin, rise in altitude to 2,000 to 5,000 feet. Shallow, clear streams draining the range flow to the Bering Sea and to the Nushagak, mostly through incised bedrock gorges. Included too in the province are the outstanding, beautiful glacial lakes of the Wood River-Tikchik Lakes system. The largest of these long narrow water bodies in "U"-shaped canyons is Lake Necka, 29 miles in length. Forty or more other lakes exceed two miles in length, and depths to 900 feet have been reported.

The southern part of the largely rounded hill, flat-topped ridge country of the Nushagak-Big River Hills, is drained by the Mulchatna and Nushagak Rivers. Here the hills have gentle slopes and broad, flat, gently sloping valleys. Large lakes are absent but a few thaw lakes are in some valleys and ponds are abundant.

The Aleutian Range, in the region, rises gradually from the littoral Bristol Bay-Nushagak Lowland, and is characterized by rounded east-trending ridges 1,000 to 4,000 feet in height surmounted at intervals with volcanoes 4,500 to 8,500 feet in altitude. Extensively glaciated, the range is drained on its south side into the Pacific by short, steep streams while, in the region, drainages to and through the lowland are larger with braided channels. On this north side, too, are many large lakes partly held in by end moraines--often extending in depth well below sea level. Lake Iliamna, Naknek Lake, Becharof Lake and the Ugashik Lakes are the largest.

The littoral zone of the region, the Nushagak-Bristol Bay Lowland, is a moraine and outwash-mantled lowland rising from the sea to inner margin altitudes of 300 to 500 feet. The larger lakes and rivers earlier mentioned drain the province. Permafrost is absent or sporadic here, as it is elsewhere in the region.

The climate of the region is predominantly maritime in character, with diurnal and seasonal temperature ranges normally confined to rather narrow limits. Occasionally, however, continental influences are experienced which exaggerate prevailing conditions. Climatic statistics about King Salmon, located centrally in the region near the Naknek River, are fairly typical. Here the extreme maximum temperature is 88 degrees, but summer day temperatures above eighty degrees are extremely rare. July, the warmest month, has an average of only six days with temperatures at or above seventy degrees. The coldest temperature of record is forty degrees below zero.

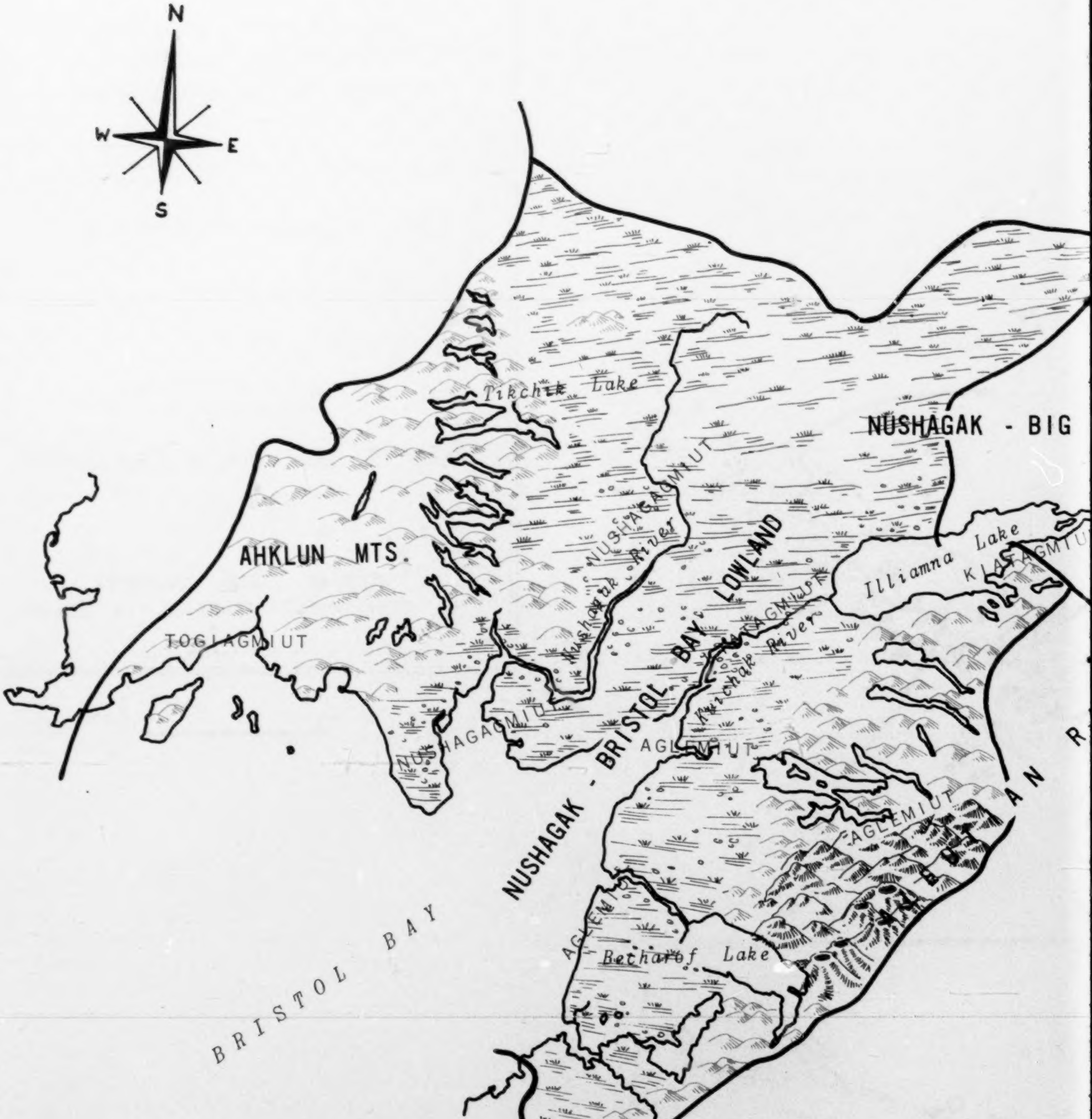
Cloud cover in the area is quite high, averaging about eight-tenths year around. Fog occurrences are frequent throughout all months of the year, but most prevalent in July and August.

The growing season averages 100 days between average freeze dates of May 28th and September 6th.

Although most snow is received during periods of general snowfall common to most of the southwestern mainland, considerable snow enters the region independently as snow showers from Bristol Bay. Seasonal snowfall averages forty inches but extensive melting occurs and accumulations average about nineteen inches. December, with ten inches of average snowfall, has the greatest monthly average amount.

Due to the passage of eastward-moving Aleutian Lows, the area experiences strong winds from December through March. Strongest winds are in a northerly direction; winds of 65 miles per hour have occurred in all months with an extreme of 95 miles per hour in February.

Solid bay ice occurs between early November and early April, while bay conditions lag about two weeks because of ice formation and break-up time in the rivers.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NUSHAGAK - BIG
AHKLUN MTS.
NUSHAGAGMIUT
NUSHAGAGMIUT
Nushagak River
Illiamna Lake
KIATAGMIUT
TOGIAGMIUT
NUSHAGAK - BRISTOL BAY LOWLAND
AGMIUT
Kvichak River
NUSHAGAGMIUT
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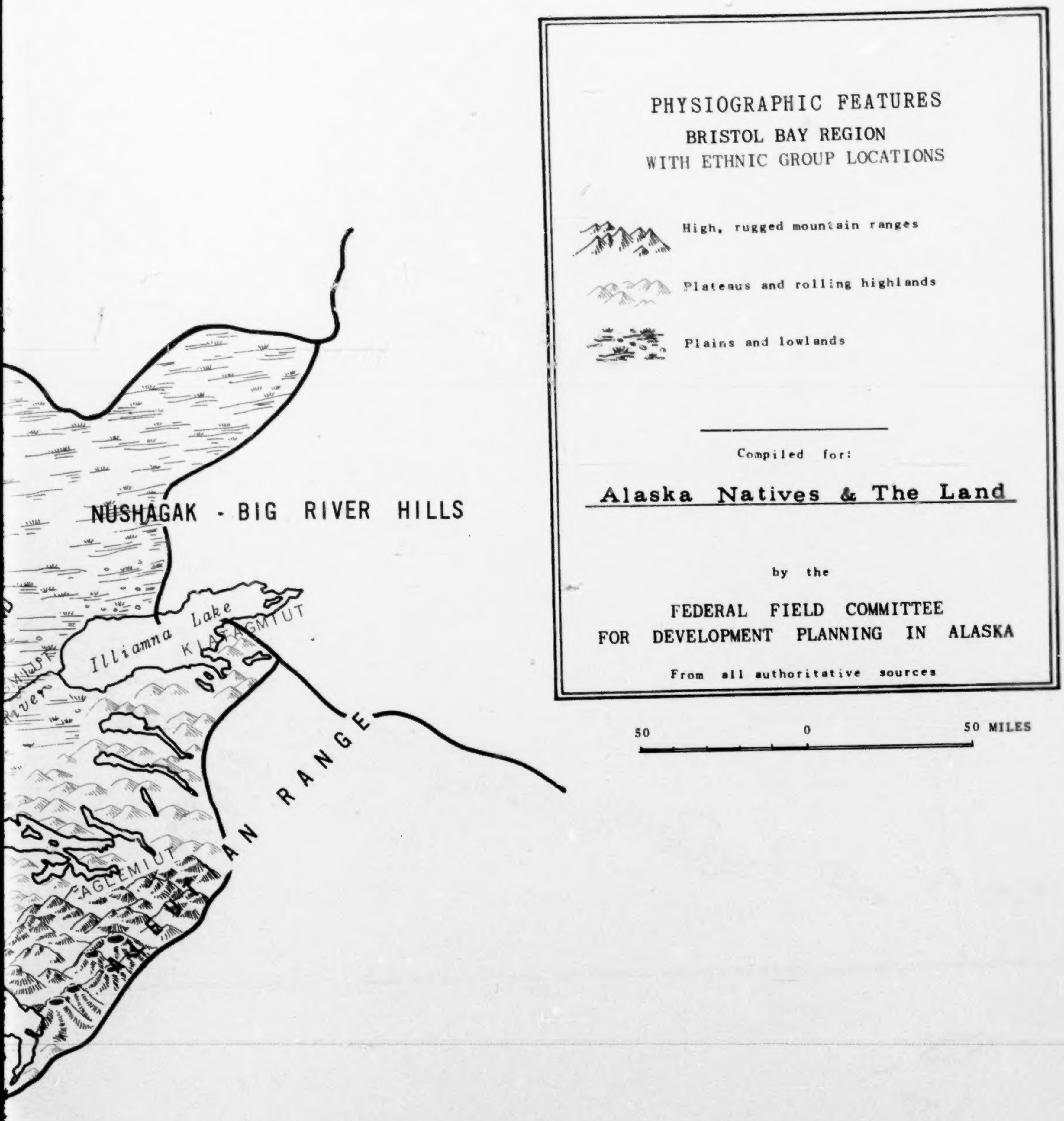
AGLEMIUT
BRISTOL BAY
Becharof Lake

FIG. III - 18



PHYSIOGRAPHIC FEATURES
BRISTOL BAY REGION
WITH ETHNIC GROUP LOCATIONS

Compiled for:

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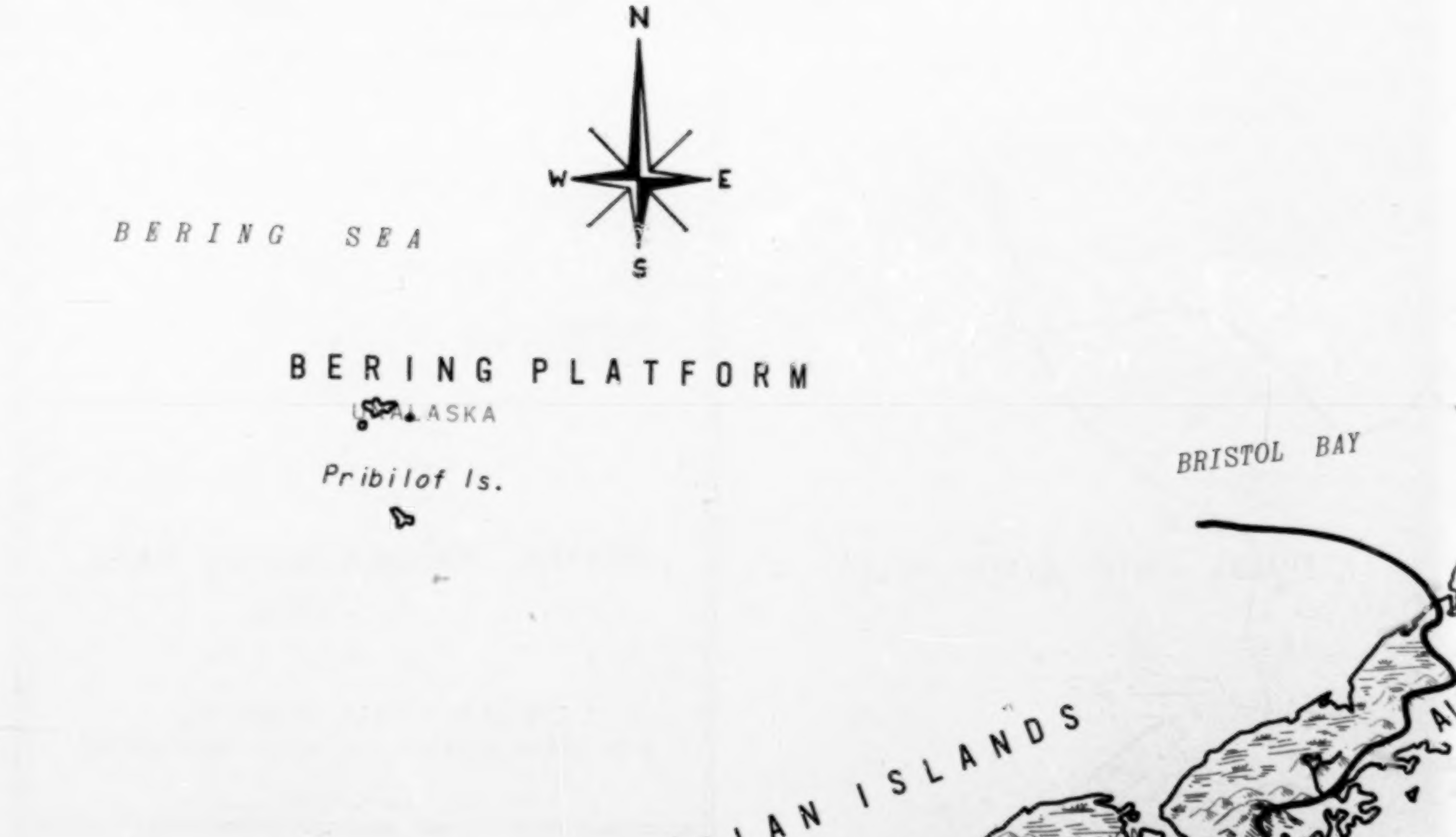
FOR DEVELOPMENT PLANNING IN ALASKA

From all authoritative sources

High, rugged mountain ranges
Plateaus and rolling highlands
Plains and lowlands
50
0
50 MILES
NUSHAGAK - BIG RIVER HILLS
Illiamna Lake
KIATAGMIUT
River
RANGE
AN
AGLEMIUT

FIG. III - 18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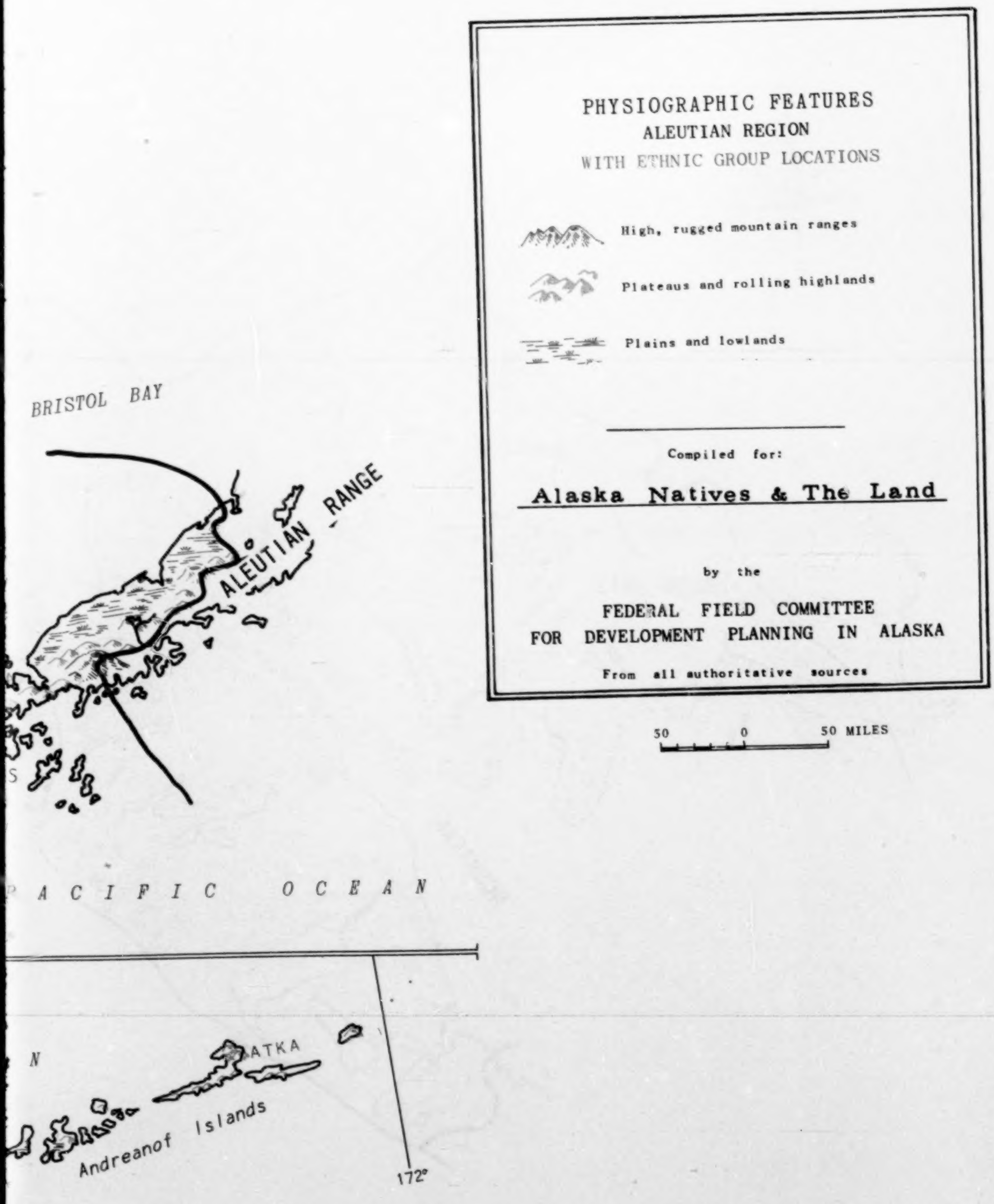
BERING PLATFORM
UNALASKA
Pribilof Is.
BRISTOL BAY
ALEUTIAN ISLANDS
ALEUT
UNALASKA
ALEUT
UNALASKA
ALEUTIAN ISLANDS
ALEUT
UNALASKA
170°
Fox Islands
PACIFIC
Near Islands
ATKA
PACIFIC OCEAN
ALEUTIAN ISLANDS
ATKA
Rat Islands
Andreanof Islands

FIG. III - 19



PHYSIOGRAPHIC FEATURES
ALEUTIAN REGION
WITH ETHNIC GROUP LOCATIONS

Compiled for:

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by the

FEDERAL FIELD COMMITTEE
FOR DEVELOPMENT PLANNING IN ALASKA

From all authoritative sources

High, rugged mountain ranges
Plateaus and rolling highlands
Plains and lowlands
50 0 50 MILES
BRISTOL BAY
ALEUTIAN RANGE
ACIFIC OCEAN
N
ATKA
Andreanof Islands
172°

FIG. III - 19

Ethnic Identification

Eskimos of the region included the ethnic groups classified as Togiagmiut, Nushagagmiut, Kiatagmiut, and Aglemiut. The precise boundary (if there ever was one) between the Aleut people and the Aglemiut is disputed in the literature and the distinction made here, ethnographically, between the Bristol Bay and Aleutian region is somewhat arbitrary.

Figure III - 18 locates ethnic groups in relationship to physiographic features.

ALEUTIAN REGION
(13.9 million acres)

Physiographic and Climatic Description

Included in the Aleutian physiographic-ethnographic, natural resource-based region of this report are the following physiographic sections and parts: Aleutian and Pribilof Islands and Alaska Peninsula--parts of Nushagak-Bristol Bay Lowland southwest of Mother Goose Lake drainage, and the Aleutian Range southwest of Mt. Veniaminof.

The Aleutian Range and littoral lowland, from Mother Goose Lake southwest to the end of the Alaska peninsula and from Mt. Veniaminof westward inclusive of both north and south shores, is in general the same as characterized for this province in the Bristol Bay description. The islands beyond require further description.

The Aleutian Island chain surmounts the crest of a submarine ridge 1,400 miles long and twenty to sixty miles wide, rising 12,000 feet high above the sea floor on either side. This chain is an arcuate line of 57 volcanoes of Quaternary age, 27 reportedly active, rising 2,000 to 9,000 feet above sea level on the north side.

Otherwise the topography can be characterized in two types to include: wave-cut platforms less than 600 feet above sea level which are bordered by low sea cliffs and intensely glaciated mountainous islands 600 to 3,000 feet above sea level indented by fiords and high steep cliffs.

The Pribilof Islands (included in this region for ethnic and resource reasons rather than physiographic similarities) vary from the Aleutians physiographically and morphologically being a part of the Bering Platform and similar in geologic structure to St. Mathew, Nunivak and St. Lawrence Islands previously described.

Streams in the Aleutian Islands are short and swift, many plunging to the sea over spectacular waterfalls. Lakes are common in irregular ice-carved basins on the glaciated islands and in a few volcanic craters and calderas. On some islands a littoral zone of broad level inter-tidal platforms has been formed--probably by frost weathering.

There is little or no permafrost in the Aleutians, although most high volcanoes bear icecaps or small glaciers, and there are a few cirque glaciers on the mountainous islands.

The climatological picture of the Aleutian region can best be portrayed here from the data of Cold Bay, located thirty miles from the end of the Alaska Peninsula, from St. Paul Island in the Pribilof group and from the island of Shemya, easternmost in the Semichi group.

All three stations have a basically maritime climate due to the nearness of extensive open ocean areas. Thus, temperature extremes, both diurnal and seasonal, are generally confined to narrow limits. Seasonally, averages are: 24 to 47 degree minimums and 32 to 55 degree maximums at Cold Bay; nineteen to 44 degree minimums and 27 to 51 degree maximums at St. Paul; and 28 to 47 degree minimums and 34 to 52 degree maximums at Shemya. Seasonal periods at these places, and throughout the Aleutians, are difficult to define. Cloudiness is abundant, restricting the actual amount of sunshine received. At Cold Bay cloudiness averages nine-tenths sky cover the year around, and precipitation occurs 200 days a year. At Shemya precipitation occurs three days out of five the year around and St. Paul is likewise an environment of high humidities. Despite nearly constant cloudiness, high humidities and precipitation, total measurable precipitation is surprisingly light: 33.44 inches at Cold Bay, 24.31 inches at St. Paul and 28.85 inches at Shemya. Widespread heavy fog and low stratus are common throughout the region in the summer months.

Frequent high velocity windy periods average quite high--about seventeen to twenty miles per hour the year around--with gale force, blizzard snow conditions common in the winter months. At Shemya calm conditions are experienced only about two and one half percent of the time.

The Pribilofs are located at about the southern limit of the arctic ice pack; near Cold Bay, the Bering Sea is frozen over in winter while the sea surface westward in the Aleutians is ice free.

Ethnic Identification

The hardy seafaring Aleuts who have lived in the Aleutians at least 3,000 years are now commonly known to be a southern branch of the Eskimo, but for purposes of this report are classified as Aleuts and subdivided into the Atka and Unalaska ethnic sub-groups. Ethnic group location in relation to physiography is shown in Figure III - 19.

KODIAK REGION
(8.5 million acres)

Physiographic and Climatic Description

The physiographic sections and parts included in the region are: Kodiak and Afognak Islands, Barren Islands, Trinity Islands, Semidi Islands and the Aleutian Range northwest of Mt. Veniaminof (approximate longitude 159° W.).

Geographically stated, the region includes the Pacific drainages of the Alaska Peninsula from Ursus Cove southwestward to Kupreanof Point, the Kodiak Island group, Augustine Island, the Barren Islands, Trinity Islands, Chirikof Island, the Semidi Islands and all other smaller islands adjacent to the coast. The Alaska Peninsula is dominated by the Aleutian Range consisting of rounded east-trending ridges 1,000 to 4,000 feet in altitude. The range is extensively glaciated. The Pacific coast is abrupt and rugged. The drainage divide between the Bering Sea and the Pacific Ocean is generally along the highest ridges, within ten miles up the south coast. Streams to the Pacific are short and steep.

The Kodiak Island group, Barren Islands, Trinity Islands and Chirikof Island are formed by the Kodiak Mountains that are the structural continuation of the Kenai-Chugach Mountains. The Kodiak Mountains retain some glaciers. Summit altitudes are between 2,000 and 4,000 feet. Kodiak Island has a rugged northeast-trending divide having horns and aretes from which broad smooth ridges extend northwestward. The topography southeast of the divide has a strong northeasterly grain normal to the drainage. The coastline is extremely irregular, having many fjords and islands. The northern part of Afognak Island is a hilly lowland, and the western part of Kodiak Island has many broad valleys.

The islands of the Kodiak group are drained mostly by swift, clear streams that are less than ten miles long. Two rivers, each about 25 miles long, drain much of southwestern Kodiak Island.

There are several lakes more than a mile long in the southwestern part of Kodiak Island and on Afognak Island. Small ponds are scattered over the glacially sculptured topography. The glaciated valleys heading in the main divide have chains of lakes.

Two natural catastrophies have hit this region during historic times: the eruption of Mt. Katmai in 1912 and the great earthquake of 1964. The Katmai eruption dumped ash eighteen inches deep over the region, and its effects on the people, flora and fauna were not overcome for several years. The 1964 earthquake generated tsunami waves that caused great devastation to the fishing fleet, shore facilities and towns throughout the region. Recovery is now essentially complete.

The northern part of Kodiak Island, Afognak Island and Shuyak Island support much spruce timber but most other islands are treeless. Some spruce also occur in the drainages of the northern part of the Alaska Peninsula; willow and alder are the common species in those parts of the region that support woody vegetation. Grasses and shrub type plants dominate most of the region lying below the alpine zone.

The Kodiak region has a maritime climate which is usually considered favorable for agriculture and generally pleasant to humans. Annual precipitation averages about fifty inches. Temperature records at Kodiak show that the months of December through March average 31° F. and August averages 54.8° F. Eighty-six degrees is the record high temperature and 3° F. the record low.

Ethnic Identification

The original ethnic group of the Kodiak region was the Kaniagmiut eskimo. Later, following Russian occupation, a fusion of Aleut and Kaniagmiut people resulted. Figure III - 20 illustrates ethnic location with relationship to physiographic features.

COOK INLET REGION
(17.5 million acres)

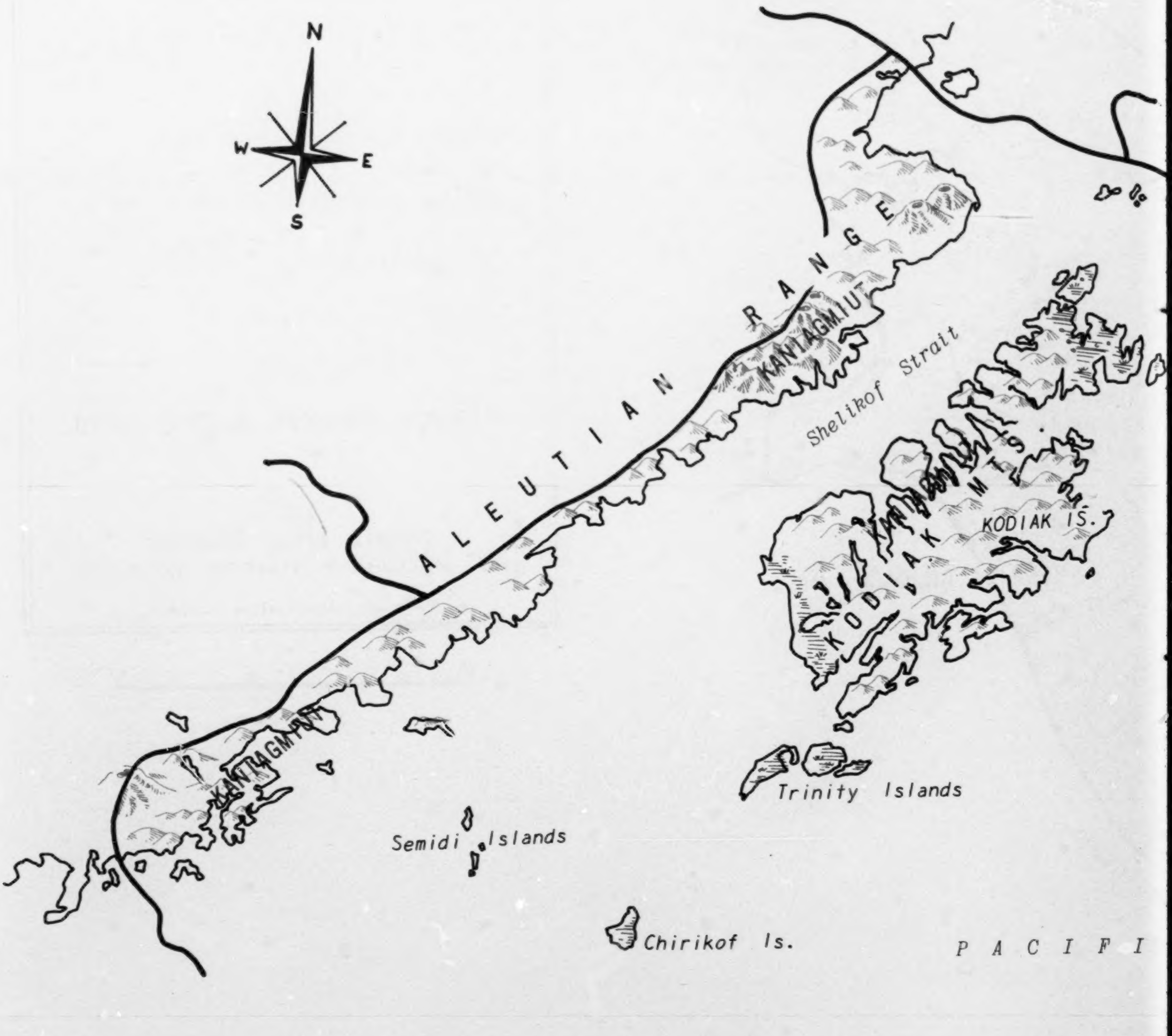
Physiographic and Climatic Description

The physiographic sections and parts within the region include: the Aleutian Range draining to Cook Inlet, the Alaska Range draining to the Susitna and Cook Inlet, the Talkeetna Mountains draining to the Susitna, Upper Matanuska Valley, Kenai-Chugach Mountains draining to Cook Inlet, and Cook Inlet-Susitna Lowland.

The country around Cook Inlet is impressive in its grandeur. Just outside the inlet to the north rises the snow-capped Aleutian range with several extinct or active volcanoes. The Aleutian Range merges with the Alaska Range and the great peaks of Mount Foraker, Mount Hunter, Mount McKinley and Mount Brooks which dominate the northern horizon of the region.

On the east coast of the inlet is the Kenai Peninsula. Here the glaciated lowland of ground morain and outwash plains topography abuts the Kenai and Chugach Mountain ranges with their backbone of glaciers and ice fields, indented by Cook Inlet's Turnagain Arm with its great tidal fluctuations, and by fjords facing beautiful Kachemak Bay to the south.

Beyond the upper reach of Cook Inlet--the Knik Arm--the rugged radial ridges of the Talkeetna Mountains complete the frame of mountain grandeur rimming the basin.


N
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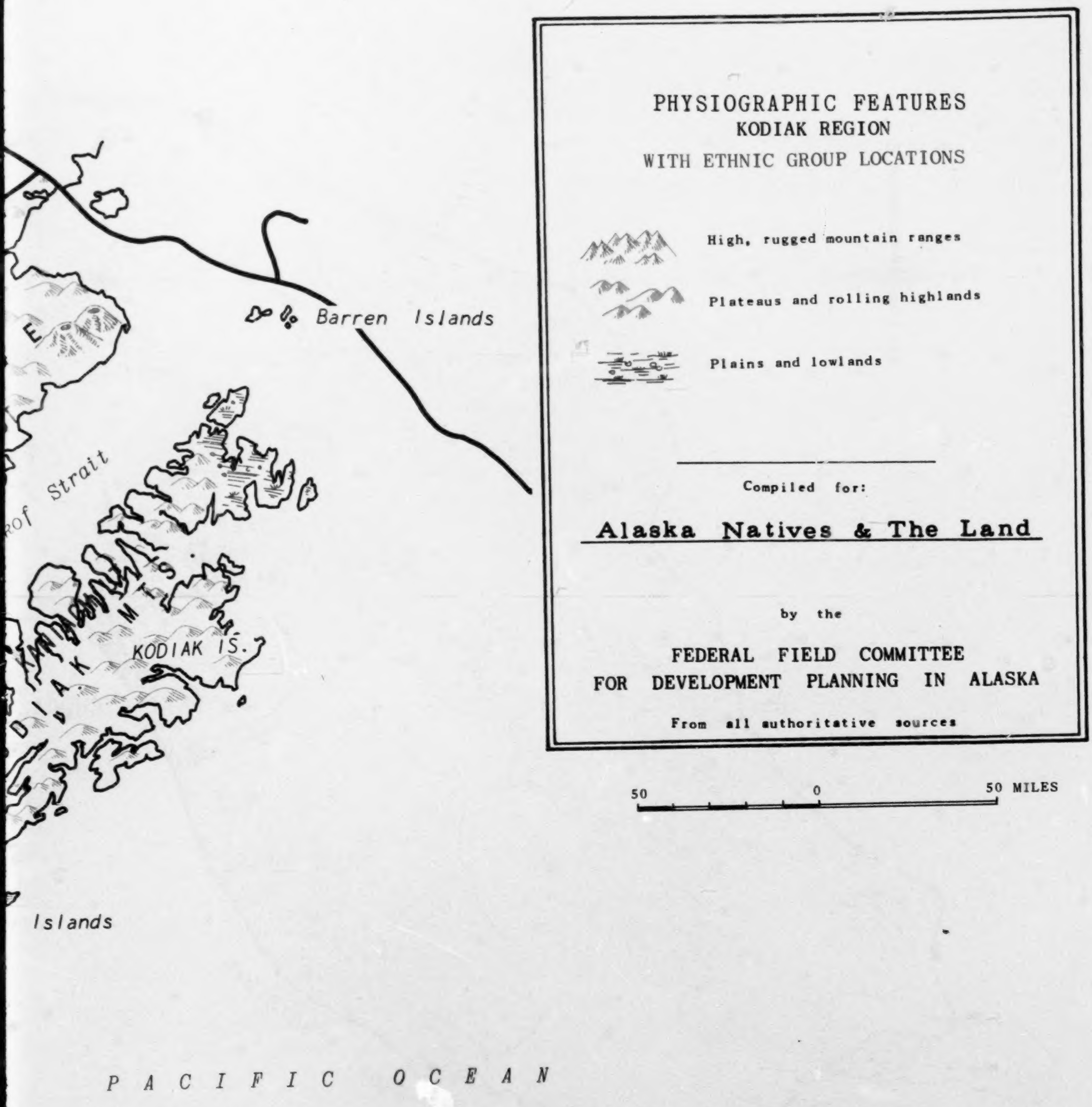
ALEUTIAN RANGE
KANIAGMIUT
KANIAGMIUT
KANIAGMIUT
Shelikof Strait
KODIAK MTS.
KODIAK IS.
Trinity Islands
Semidi Islands
Chirikof Is.
P A C I F I

FIG. III - 20



PHYSIOGRAPHIC FEATURES
KODIAK REGION
WITH ETHNIC GROUP LOCATIONS

Compiled for:

Alaska Natives & The Land

by the

FEDERAL FIELD COMMITTEE
FOR DEVELOPMENT PLANNING IN ALASKA

From all authoritative sources

High, rugged mountain ranges
Plateaus and rolling highlands
Plains and lowlands
Barren Islands
rof Strait
KODIAK IS.
DIAK MTS.
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Islands
PACIFIC OCEAN
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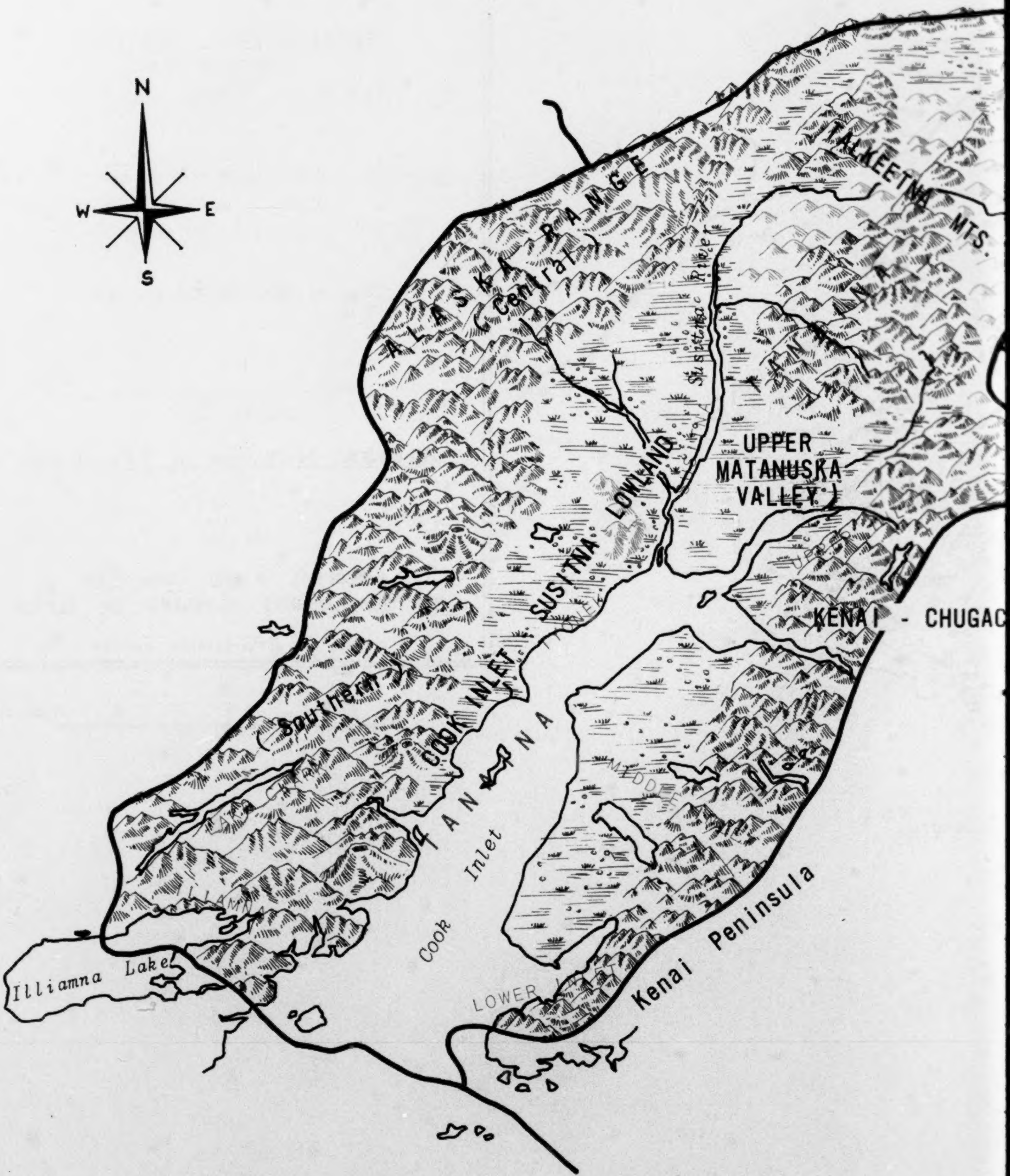
50 MILES

FIG. III - 20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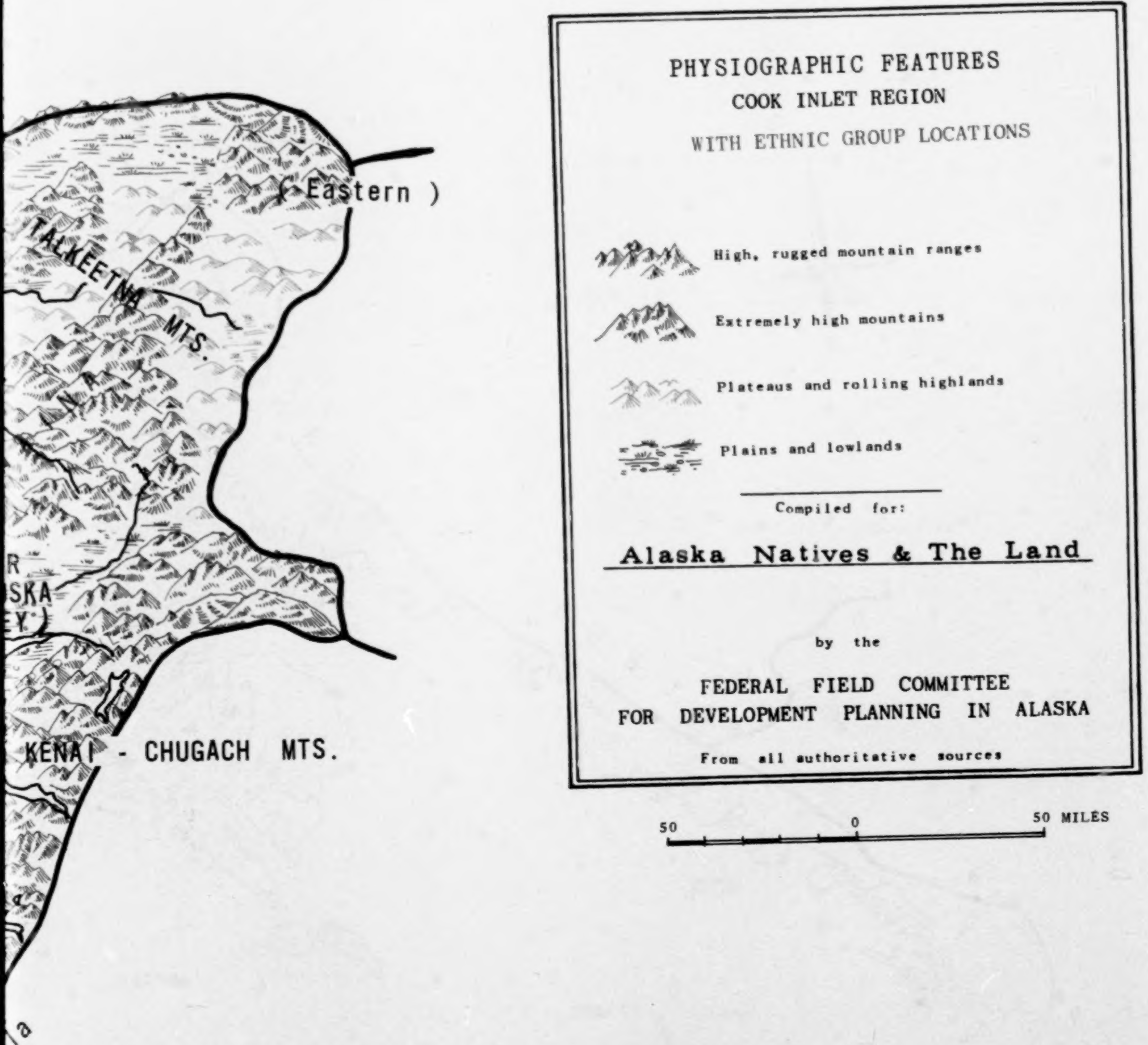
ALASKA RANGE
(Central)
(Southern)
TALKEETNA MTS.
Susitna River
SUSITNA LOWLAND
UPPER MATANUSKA VALLEY
KENAI - CHUGAC
COOK INLET
TANAINA
Cook Inlet
MIDDLE
LOWER INLET
Kenai Peninsula
Illiamna Lake

FIG. III - 21


(Eastern)
TALKEETNA MTS.
R
SKA
EY)
KENAI - CHUGACH MTS.
a
High, rugged mountain ranges
Extremely high mountains
Plateaus and rolling highlands
Plains and lowlands
50
0
50 MILES

PHYSIOGRAPHIC FEATURES
COOK INLET REGION
WITH ETHNIC GROUP LOCATIONS

Compiled for:

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by the

FEDERAL FIELD COMMITTEE
FOR DEVELOPMENT PLANNING IN ALASKA

From all authoritative sources

FIG. III - 21

The Cook Inlet Lowland has always been the dominant physiographic feature permitting and encouraging human occupation.

Mostly less than 500 feet in elevation above sea level, with local relief of fifty to 250 feet, the lowland is glaciated with areas of ground moraine and stagnant ice topography, drumlin fields, eskers, and outwash plains. Rolling upland areas border the surrounding mountain ranges. Drained by the Susitna River and other streams flowing into Cook Inlet, the region is both the major population center and the most agriculturally developed area of the state.

Three large lakes--Tustumena, Skilak, and Beluga--fill ice-carved basins at the margins of the surrounding mountains.

The lowland is glacier free except at one bordering point with the Alaska Range in the West. Sporadic permafrost is only present in the northern part.

Streams entering the basin from the Alaska Range, Talkeetna and Chugach Mountains are generally swift and frequently braided, heading in the glaciers topping the ranges.

The country has a fairly moderate climate tempered somewhat by the Japan current and maritime influences associated with the topographic barriers caused by the surrounding mountains. These barriers, however, work in two ways. On the one hand, the Chugach Range acts as a barrier to the influx of warm, moist air from the Gulf of Alaska, so the average precipitation in the Cook Inlet basin is only ten to fifteen percent of that on the Gulf of Alaska side. Contrarily, the Alaska Range is a barrier to very cold air from the interior to the north.

The four seasons are well-marked in the region, but in length and major characteristics vary from usually accepted middle latitude standards.

Winter extends from mid-October to mid-April, the period of frozen ponds, streams and lakes. The shortest day has five hours and 28 minutes of possible daylight. Periods of clear cold weather alternate with cloudy mild conditions. Significant fog often accompanies clear cold weather due to the low level moisture source of Cook Inlet, while considerable floating ice is present, high tidal fluctuations maintain some open water throughout the winter. On the average, measurable snow falls between mid-October and mid-April, occurring on twenty to 25 percent of winter days in small amounts. Normally, snow depth doesn't accumulate over fifteen inches.

Spring follows mid-April break-up and is characterized by warm, pleasant days and chilly nights accompanied by rapidly rising mean temperatures and exceedingly small amounts of precipitation.

Summer, from June to early September, is in reality two seasons of about equal length--the first part dry, the second wet. At the time of the summer solstice, possible sunshine amounts to nineteen and one half hours. About mid-July average cloudiness increases markedly and the remainder of the summer usually accounts for forty percent of the annual precipitation.

Autumn is brief between early September and mid-October. The frequency of cloudy days and precipitation drops. Mild days and chilly nights are punctuated with occasional autumn storms from the southern Bering Sea and Bristol Bay. Wind gusts exceeding fifty miles per hour may accompany these storms.

The growing season in the basin averages 112 days; precipitation totals an average of about fifteen inches with sixty or more inches of snowfall each year; temperatures average in the low fifties in summer and teens in winter.

Ethnic Identification

Several sub-groups of the Athapascan-speaking Tanaina Indians occupied this region. Included were people of:

Lower Inlet, Middle Inlet, Upper Inlet,
Susitna, Tyonek, Iliamna, Lake Clark.

Although Eskimo occupation of the southern shores of Kachemak Bay existed, the boundaries of the Cook Inlet Region exclude this group and they are identified with the Gulf of Alaska region.

Figure III - 21 illustrates ethnic group location in relation to physiography.

COPPER RIVER REGION
(16.5 million acres)

Physiographic and Climatic Description

The physiographic sections of this region, in whole or in part, include: the eastern part of the Alaska Range draining to the Copper River Basin, the Gulkana Upland, Talkeetna Mountains draining to the Copper River Basin, Wrangell Mountains draining to the Copper River Basin, Copper River Lowland, Lake Louise Plateau and Kenai-Chugach Mountains draining to the Copper River Basin.

The Gulkana Upland and the Copper River Lowland form the interior basin of the Copper River region which is surrounded by the Alaska Range to the north, the Talkeetna Mountains to the west, the Wrangell Mountains to the east and the Kenai-Chugach Mountains to the south.

The eastern part of the Copper River Lowland is a relatively smooth plain 1,000 to 2,000 feet in altitude, trenched by the valleys of the Copper River and its tributaries with their steep 100 to 500 foot walls. The forks of this lowland, on each side of the Wrangell Mountains to the east, are the Copper and Chitina Valleys. These valleys contain longitudinal morainal and ice-scoured bedrock ridges rising above axial outwash plains. The western part of this lowland--the Lake Louise Plateau--is a rolling upland 2,200 to 3,500 feet in altitude with morainal and stagnant ice topography.

Rising in the mountains, glaciers and large ice caps that rim the interior basin, several tributaries feed glacial waters to the main stem of the Copper River and drain the lowland itself in passing. Many of these streams have braided upper courses.

Large lakes occupy deep basins in the mountain fronts and thaw lakes are abundant in the eastern plain of the lowland.

Glaciers are present in the surrounding mountains, but absent in the lowland; permafrost underlays the entire region.

The elevations of the several mountain ranges (6,000 to 12,000 feet) surrounding the interior lowland significantly influence the region's climate so that despite relative proximity to the maritime effects of the Gulf of Alaska, the region is under dominant continental climatic influences. Typical of this are the seasonal temperature extremes with a range between high maximums and minimums of 156 degrees. Abetting winter cold extremes is the effect of radiational cooling when the sun makes only a brief appearance over the high horizons in mid-day. The result is a total of five months with average minimum temperatures below zero.

In contrast to the cold winters with short days, summers have warm days and cool nights and eighteen to twenty hours of sunshine.

Low annual precipitation is also typical of the region due to montane influences depositing sixty inches of precipitation from the Gulf of Alaska on the windward side of the Chugach Range.

Despite a brief growing season of only 78 days, about one half of the annual precipitation occurs during the summer months making gardening, if not commercial agriculture, possible.

Ethnic Identification

In aboriginal times, this region was practically excluded from the rest of the world. A harsh land, it was sparsely occupied by Ahtena Indians with two ethnic sub-groups--the Miduusky and the Tutlazan.

Figure III - 22 illustrates ethnic sub-group location in relation to physiographic features.

GULF OF ALASKA REGION

(12.5 million acres)

Physiographic and Climatic Description

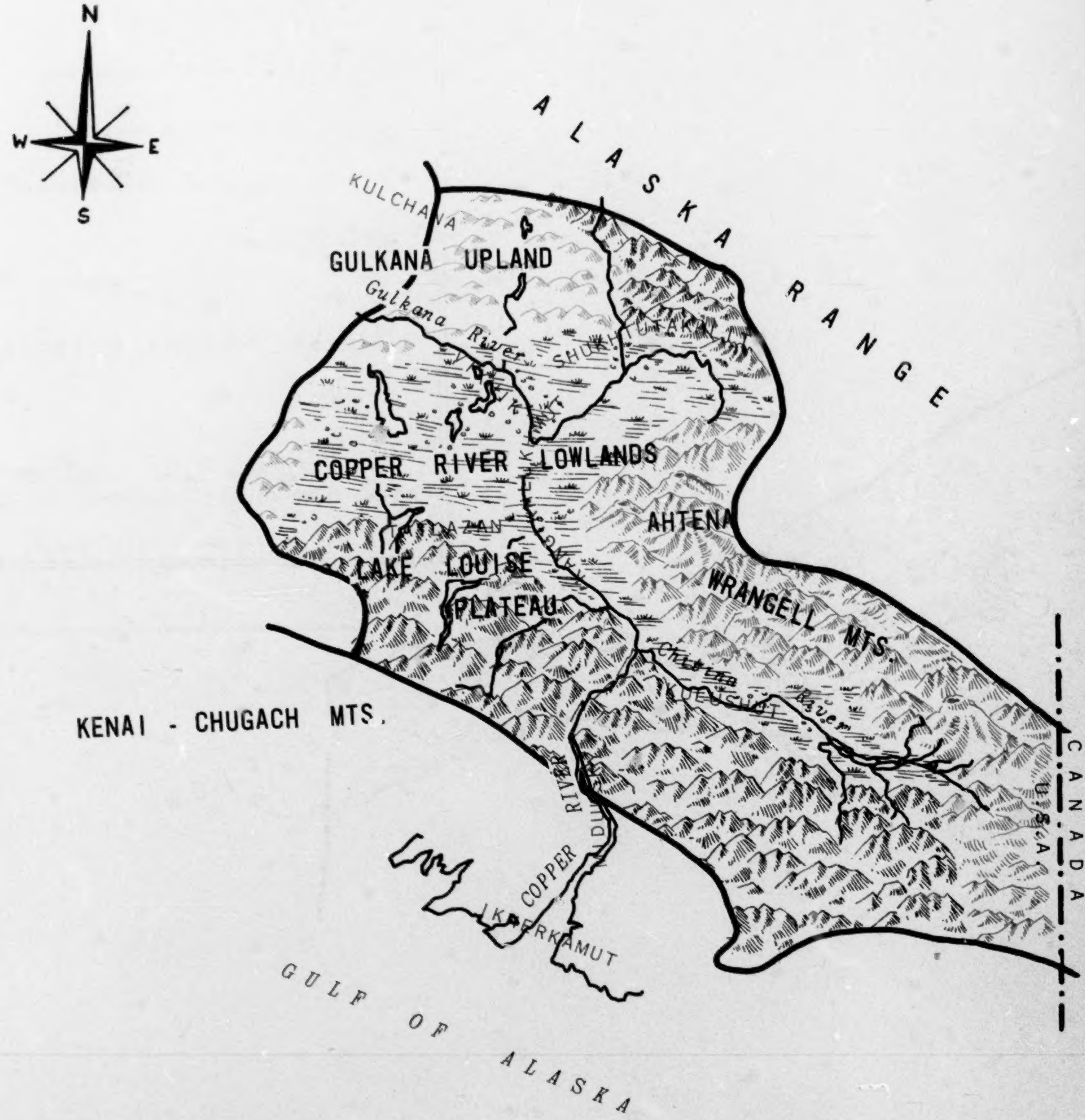
The physiographic provinces and parts of this region are: Kenai-Chugach Mountains draining to the Gulf of Alaska and Prince William Sound from English Bay to Copper River, and Gulf of Alaska Coastal Section.

It may be further characterized to include the drainages into the Gulf of Alaska from Point Manby, at the western extreme of Yakutat Bay, to the southern tip of the Kenai Peninsula, plus numerous islands. It is essentially a great crescent, backed on the north and east by high, rugged mountains, the Kenai-Chugach Range and the St. Elias Range and, sloping to a coast deeply indented by fjords and sounds, separated by ridges which often extend as islands. There is, however, a narrow coastal plain extending eastward from the Copper River Delta to the east boundary of the region.

The high segments of the Kenai-Chugach Range consist of extremely rugged east-trending ridges 7,000 to 13,000 feet high. Low segments consist of massive mountains five to ten miles wide and 3,000 to 6,000 feet high, separated by valleys and passes one half to one mile wide. All higher parts of the range are buried in ice fields which feed valley and piedmont glaciers.

The St. Elias Mountains are massive, isolated, block-like mountains 14,000 to 19,000 feet high which rise at intervals of five to thirty miles from a myriad of narrow ridges and sharp peaks 8,000 to 10,000 feet high. The range is drained almost entirely by glaciers which form a network four to fifteen miles wide and eighty miles long.

Typically, the streams are short and swift; most head in glaciers. A prominent exception is the Copper River which originates north of the mountains, bisects the Chugach Range, and forms an immense delta east of the present city of Cordova.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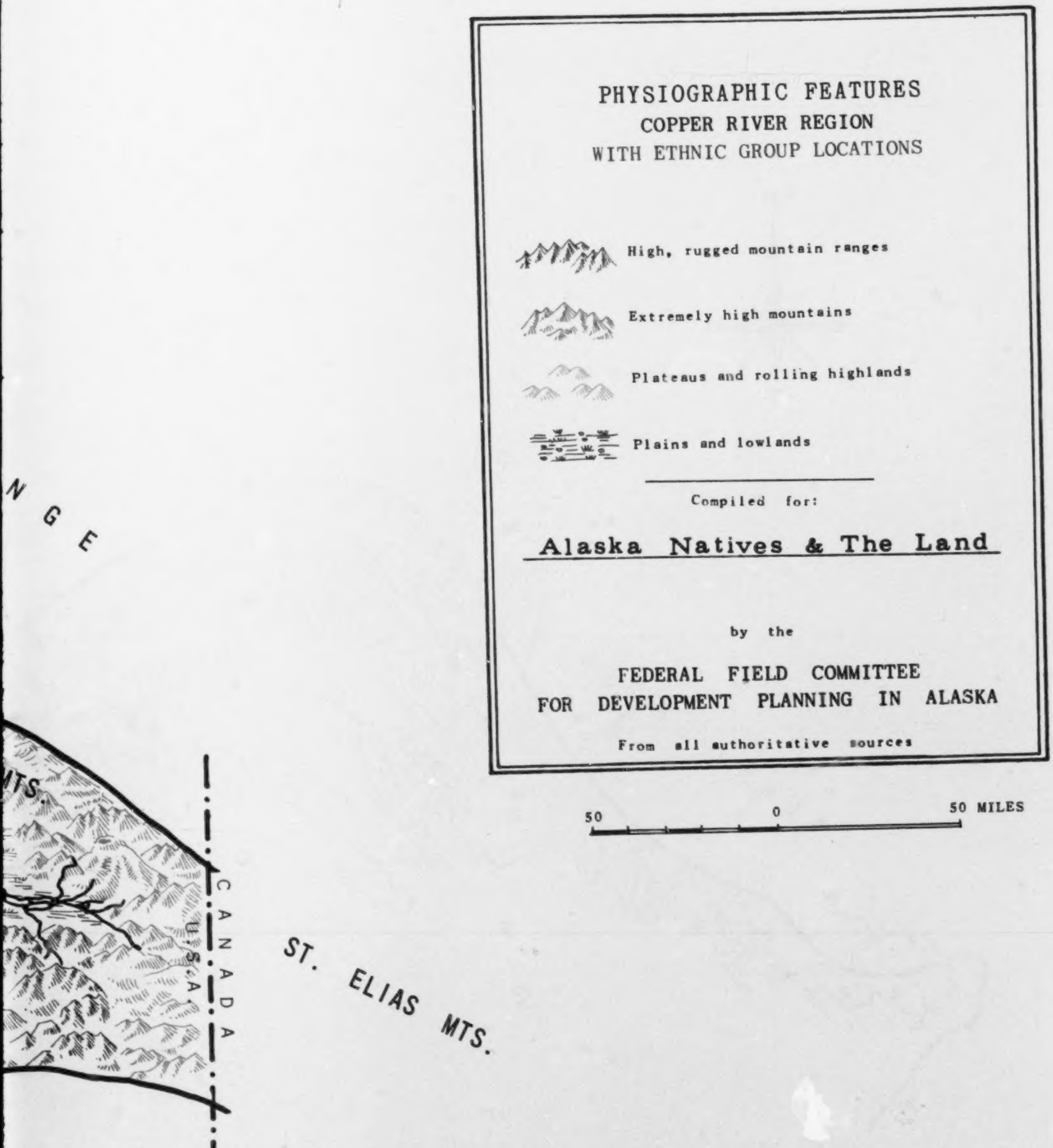
S
ALASKA RANGE
KULCHANA
GULKANA UPLAND
Gulkana River
SHUKHUTAKKI
COPPER RIVER LOWLANDS
TATLAZAN
AHTENA
LAKE LOUISE PLATEAU
WRANGELL MTS.
Chitina River
KUEUSUIT
KENAI - CHUGACH MTS.
COPPER RIVER
IKAERKAMUT
CANADA
U.S.A.
GULF OF ALASKA

FIG. III - 22



PHYSIOGRAPHIC FEATURES
COPPER RIVER REGION
WITH ETHNIC GROUP LOCATIONS

High, rugged mountain ranges
Extremely high mountains
Plateaus and rolling highlands
Plains and lowlands
NGE
MTS.
ST. ELIAS MTS.
CANADA
U.S.A.
50
0
50 MILES

Compiled for:

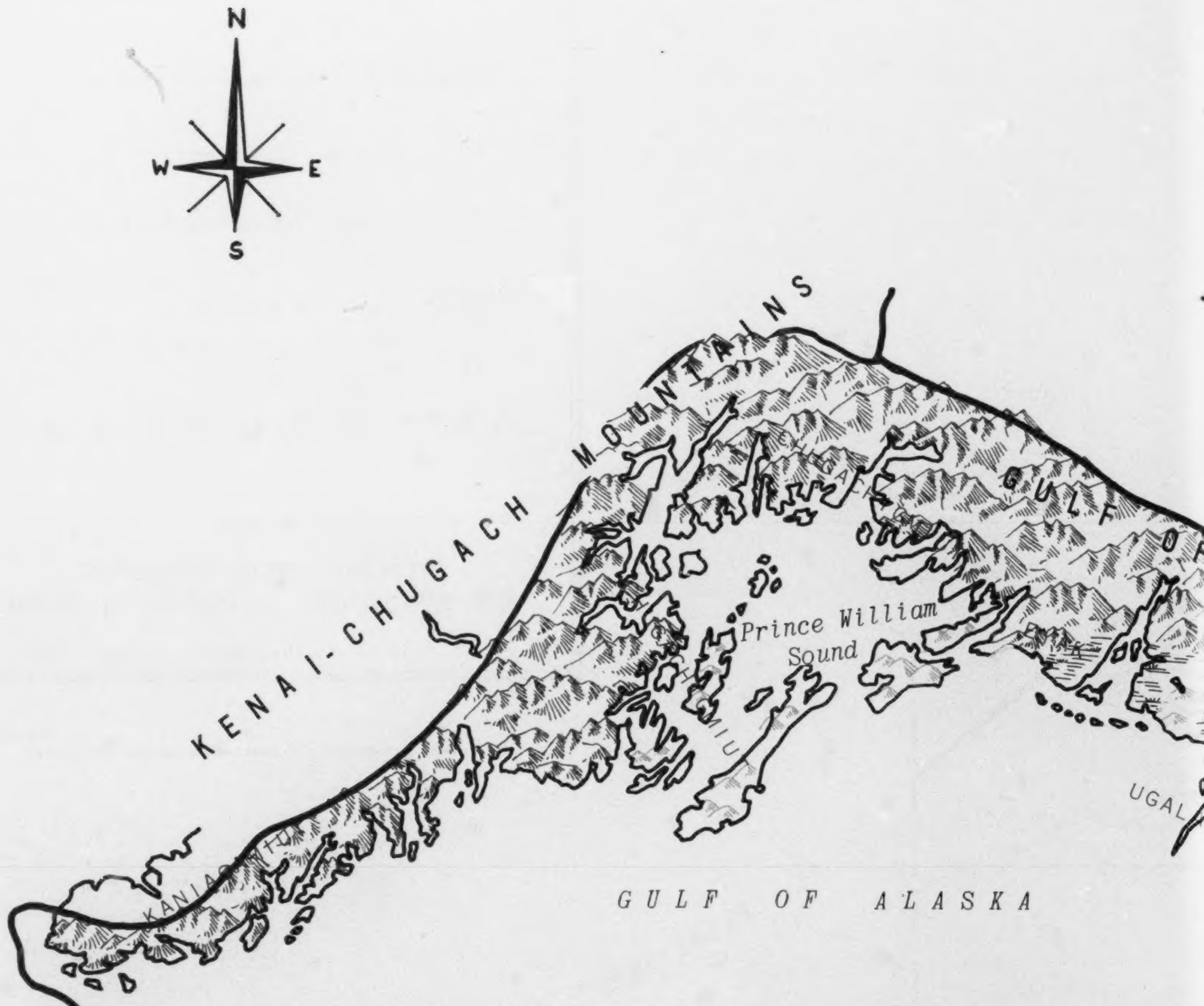
Alaska Natives & The Land

by the

FEDERAL FIELD COMMITTEE
FOR DEVELOPMENT PLANNING IN ALASKA

From all authoritative sources

G. III - 22


N
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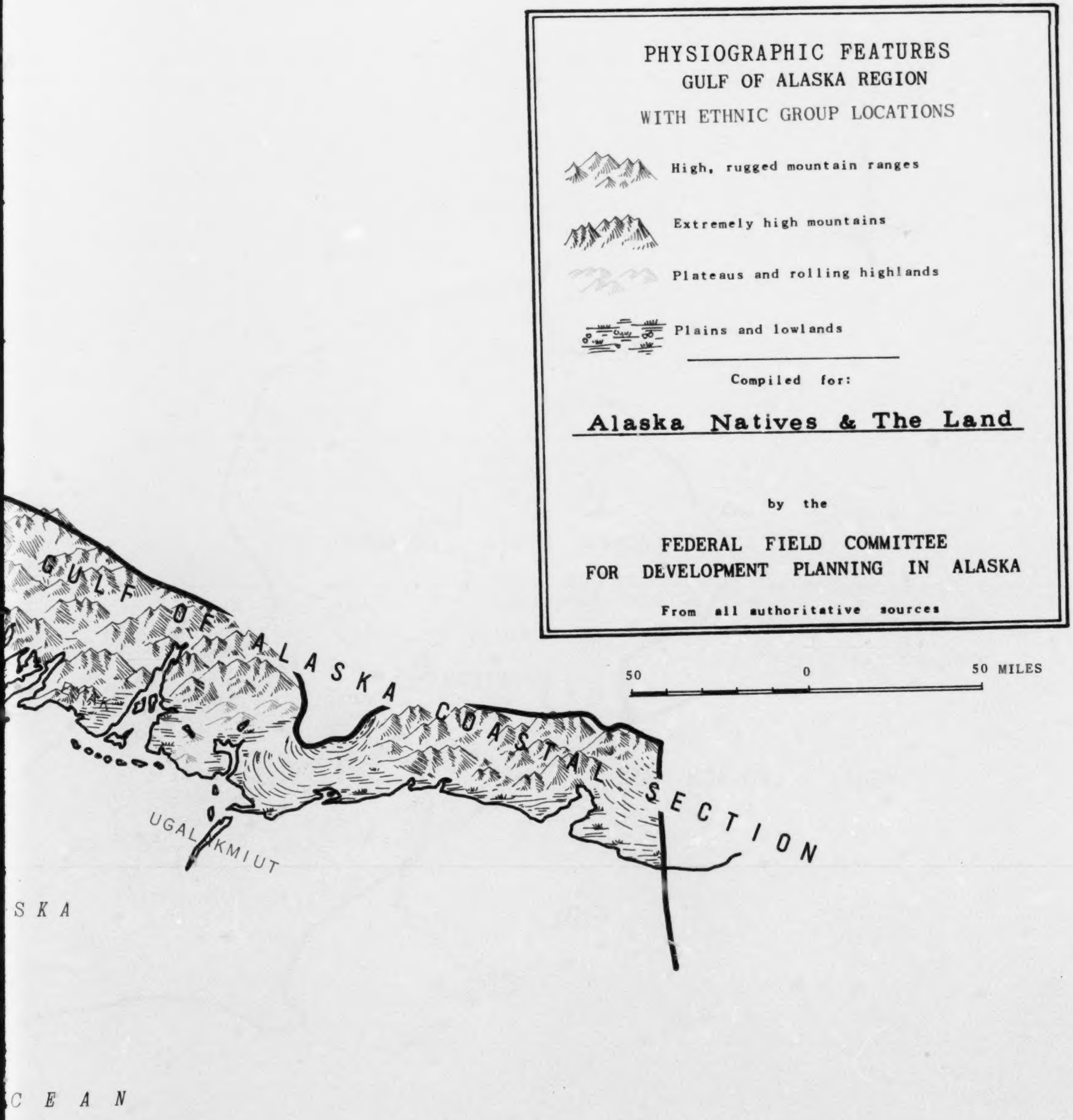
KENAI-CHUGACH MOUNTAINS
GULF OF
Prince William Sound
UGAL
GULF OF ALASKA
PACIFIC OCEAN

FIG. III - 23


PHYSIOGRAPHIC FEATURES
GULF OF ALASKA REGION
WITH ETHNIC GROUP LOCATIONS
High, rugged mountain ranges
Extremely high mountains
Plateaus and rolling highlands
Plains and lowlands
Compiled for:
Alaska Natives & The Land
by the
FEDERAL FIELD COMMITTEE
FOR DEVELOPMENT PLANNING IN ALASKA
From all authoritative sources
50
0
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GULF OF ALASKA COASTAL SECTION
UGALAKMIUT
SKA
CEAN

FIG. III - 23

The climate of the region is conditioned by the waters of the Gulf of Alaska, and the mountains which serve as a barrier to the flow of cold continental air from the interior during the winter. The rugged topography causes extreme local climatic variations. Temperatures rarely go below zero or exceed 80° F. Precipitation is locally moderate to heavy: Valdez has 62.4 inches annually while Cordova averages 77.47 inches and Seward 67.35 inches. Snow accumulations in the Prince William Sound area sometimes exceed ten feet, while they may be relatively slight in the eastern portion of the region.

The flora and fauna of this region are exceedingly rich. The forests are predominantly Sitka spruce and western hemlock with dense patches of alder occurring near timberline, on slide areas and on the steeper exposures. Cottonwood, birch, willow and other woody species have a scattered distribution related to their ecological requirements. Berries are found in great variety and seasonal abundance, and grasses of several kinds dominate the delta and sand dune areas, being especially abundant on the Copper River delta and eastward.

Ethnic Identification

The ethnic groups associated with this region were Eskimo and Eyak and Tlingit Indians. The Chugachigmiut and Ugalakmiut Eskimo represented the most southern extension of the Eskimo culture in Alaska. The Eyak Indian, a people whose origin is clouded and the Yakutat tribe of the Tlingits also were present.

Figure III - 23 locates these ethnic groups in relation to physiographic features.

SOUTHEAST REGION
(27.0 million acres)

Physiographic and Climatic Description

The physiographic sections and parts within this region are: the Fairweather Range, Chilkat-Baranof Mountains, Boundary Ranges, Coastal Foothills, Kupreanof Lowlands, and Prince of Wales Mountains.

Only recently, in geologic time, have portions of this region been freed of overlying glaciers. Large ice fields and numerous glaciers still characterize the mountainous mainland, while the islands and some coastal areas are now ice free or contain only glacial relects. The physiography and present flora and fauna are totally or strongly influenced by recent glacial history.

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The topography is established by the Pacific Mountain System (actually two mountain ranges partially separated by the Kupreanof Lowland) greatly modified by the erosive action of glaciers. The precipitous terrain is cut deeply by channels, straits and fjords, creating several large and innumerable small islands, termed the Alexander Archipelago. The coastal edges are typically rugged, with flat land occurring only in a strip south of Yakutat Bay, and to more limited extents at river mouths and valleys left by retreating glaciers. From the coasts bordering the Pacific Ocean, maximum terrain elevations tend to increase until reaching the summit of the Coast Mountains on the mainland. In the region between Glacier Bay and Lituya Bay, some of the highest and most spectacular mountains on the continent rise directly from the sea.

Four mainland rivers dissect the coastal mountains, the Unuk, Stikine, Taku, and Alsek. Access to the region via these valley routes has been exploited by many flora and faunal elements as well as by humans. The numerous waterways within the region all afford easy avenues of travel and dispersal as well as a corridor to the coastal region south of Alaska.

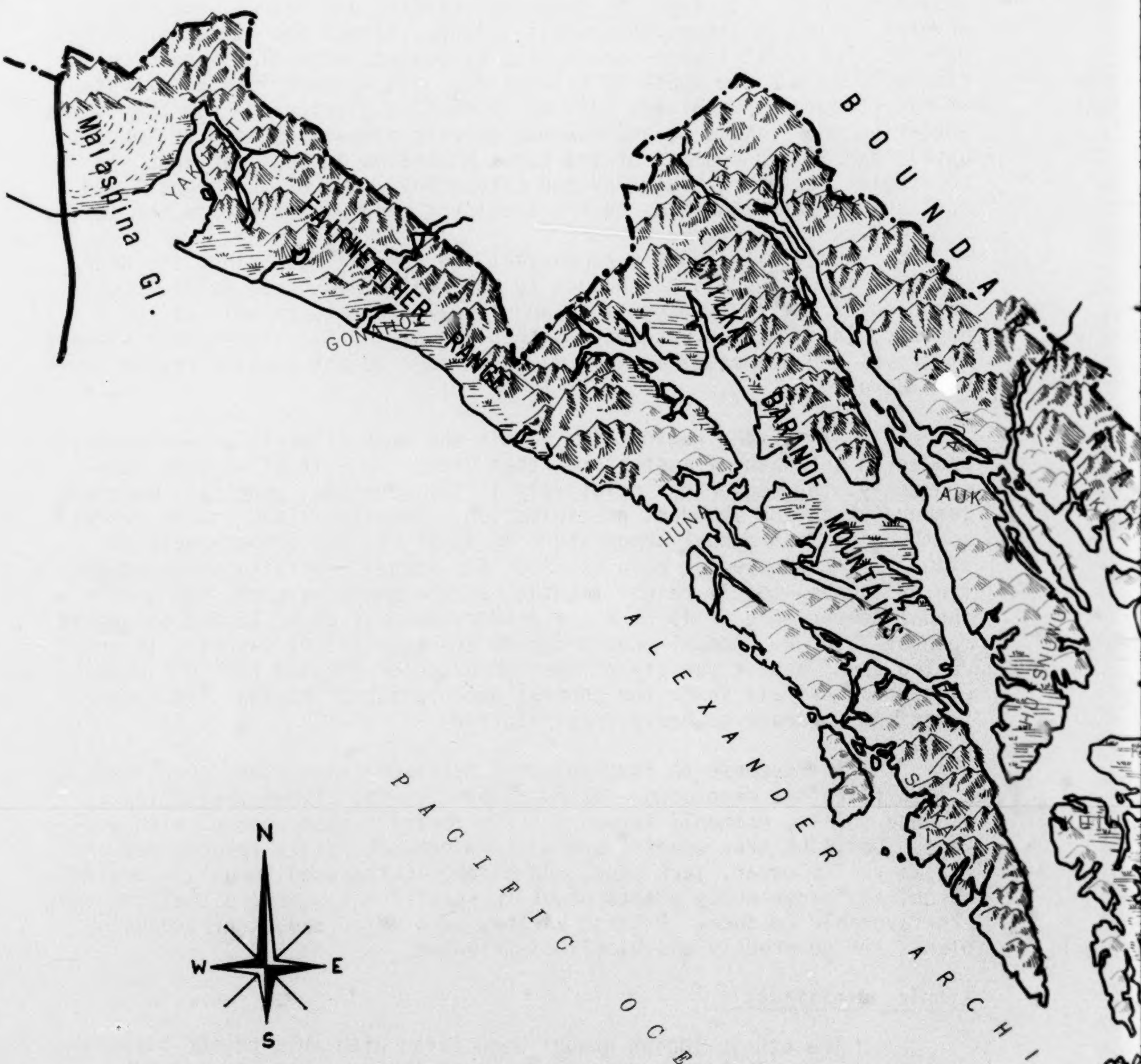
All of the region lies within the area of maritime influences, and is in the path of most storms that cross the Gulf of Alaska. Consequently, the region has relatively little sunshine, generally moderate temperatures, and abundant precipitation. Annette Island in the extreme south has a mean annual temperature of 45.5° F.; the January mean is 34.0° F. and the August mean is 58.2° F. Annual precipitation averages 116.68 inches--mostly rain. Yakutat, at the north extreme, has a mean annual temperature of 45.5° F., a January mean of 25.5° F. and an August mean of 53.0° F. Annual precipitation averages 133.91 inches. Intervening areas have a variety of weather extremes related to their unique exposures, but all share the general description of having mild temperatures and moderate to heavy precipitation.

In response to favorable moisture and temperature conditions, a lush flora has developed. Below timberline the climax vegetation is a dense forest, commonly termed a "rain forest," interspersed with muskegs. Dominant tree species are western hemlock, Sitka spruce, red and Alaska yellow cedar, jack pine, and alder. Cottonwood, mountain hemlock, birch, and other woody plants occur in special ecological situations that are favorable to them. A large variety of grasses and berry-producing plants are generously and widely distributed.

Ethnic Identification

The ethnic Indian groups associated with this region historically and today include: the *Tlingit* with their sub-groups the Auk, Chilkat, Gonaho, Hehl, Henya or Hanega, Huna, Hutsnuwu, Kake, Kuiu, Sanya, Sitka, Stikine, Sumdum, Taku, Tongass, Yakutat; the Metlakatla of the *Tsimshian*; and the Kaigani of the *Haida*.

Figure III - 24 locates ethnic groups and sub-groups in relationship to physiography.


Malaspina Gl.
YAKU
FAIRWEATHER RANGE
GONAHO
BOUNDAR
CHILKAT
BARANOF MOUNTAINS
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ALEXANDER ARCHIPEL
PACIFIC OCEAN
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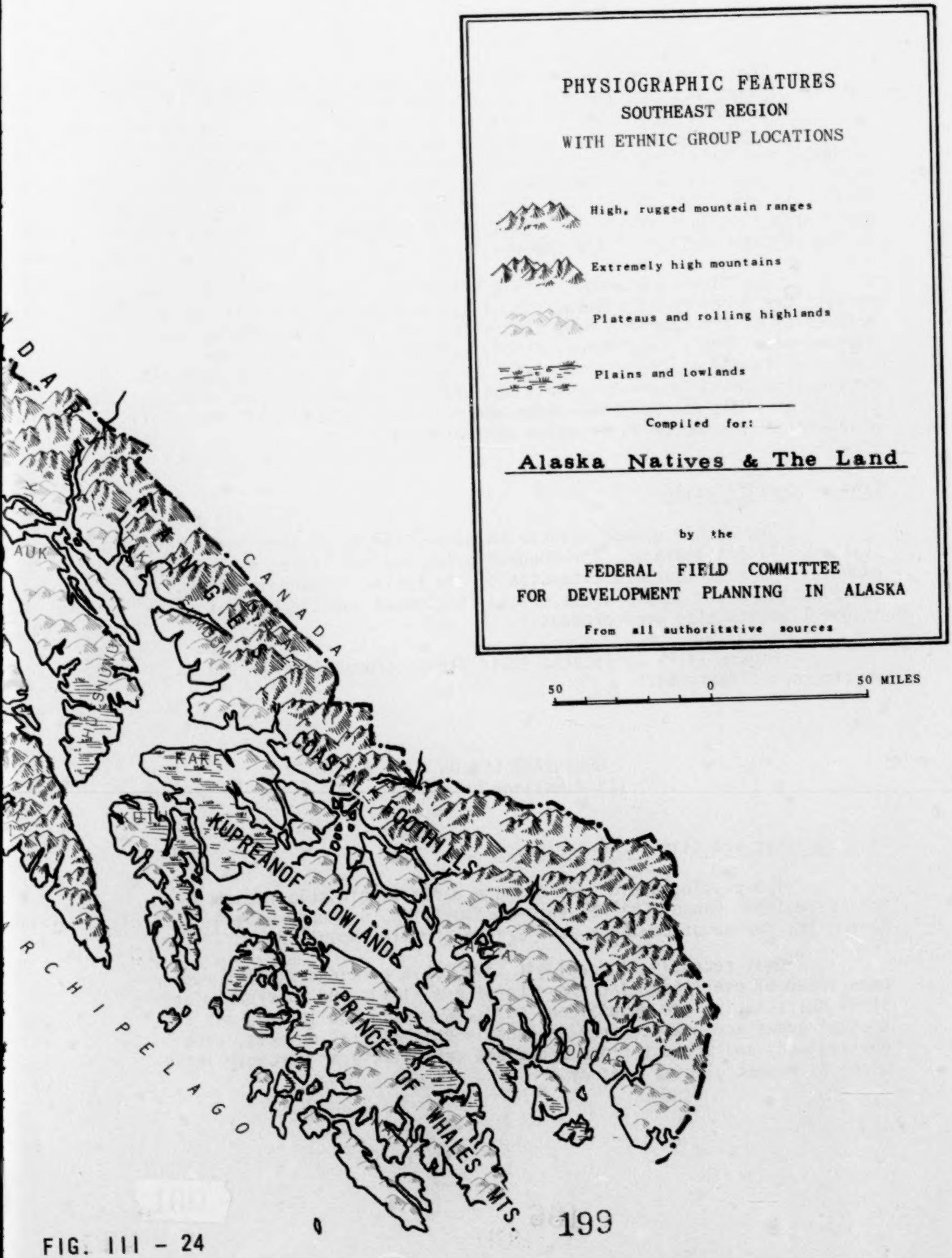
FIG. III - 2



PHYSIOGRAPHIC FEATURES
SOUTHEAST REGION
WITH ETHNIC GROUP LOCATIONS

High, rugged mountain ranges
Extremely high mountains
Plateaus and rolling highlands
Plains and lowlands
50
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AUK
AUK
CANADA
HUTSNUWU
KAKE
KUIU
COASTAL FOOTHILLS
KUPREANOF LOWLAND
PRINCE OF WHALES MTS.
ARCHIPELAGO
TONGAS

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From all authoritative sources

FIG. III - 24

REGIONAL OCCUPATION AND LIVELIHOOD PATTERNS

ARCTIC SLOPE REGION

Ethnic Settlement Patterns

The culture of the Eskimos of this region has been developed over thousands of years, anthropologists placing man in the Arctic as early as 6,000 B.C. This report, however, is essentially concerned with the period since historic contact and, more particularly, with the last 100 years of United States claim, for an examination of the Native "use and occupancy" record--and with the ethnological present, for comparison with the past and understanding for the future.

To do this more than by referencing and illustrating their settlement pattern requires an understanding of human ecology (the relationship of the people to their environment) within the region.

> [This region], northern Alaska, demonstrates the interaction, both in the prehistoric past and in the ethnological present, of groups each reflecting a major ecological pattern. These are two, the nuunamiut, people of the land, whose life developed around the caribou, and the tareumiut, the people of the sea, whose primary orientation was toward sea mammal hunting and in the area of the Arctic Slope, at least, especially toward whaling. Whatever may be said of the local specializations of the cultures of northwestern Alaska in the past, whether the concern is with the Ipiutak, the Old Bering Sea, the Birnirk, or whatever, these are maritime cultures set off against inland caribou hunting cultures. The generalized Thule culture, typologically definable, basically maritime but orienting itself as well toward caribou hunting, does not, in Alaska, modify this basic ecological picture. There remains, in the historic present, the inland nomad set off against the village dweller at the sea.[4] [Emphasis added.]
>
> ...[This] general pattern of geographic settlement must be kept in mind in order properly to designate the peoples of the region. The terms nuunamiut ... and taremiut are of course derivative of native designations for the two ecological groupings. These terms are descriptive of a way of life and cannot be regarded as tribal designations.[5]

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[4] Robert
and Society
Bulletin 17
1959.

[5] *Ibid.*

[6] For pur
record.

Aboriginal Eskimo society formed bands or villages from aggregates of individuals whose association was pretty much choice and whose numbers were determined by the "carrying capacity" of their local environment. Although local groups came together in trade or seasonally in pursuit of a migratory wildlife population there has been a biologically determined territoriality excercised among the people. This territoriality has been a determinant derived from their methods of subsistence harvest and has existed for centuries until recent years (since World War II) as they have effectively adopted more and more of the technology of the white man's culture to their way of life.

This technological change permitted completion of a territorial change and population distribution distorted in piecemeal fashion by the presence of whalers, missionization and the centralization of government services begun in the last century.

Hence, today in the Arctic Slope region we have five primary settlements (present day Pt. Hope, Wainwright, Barrow, Kaktovik and Anaktuvuk) and two lesser places (Nooiksut and Atkasook) along with numerous seasonal places representing aggregations of seven taremiut groups with approximately 15 primary historic settlements and numerous seasonal places, thirteen nomadic groups of Nuunamiut and two settlements of Thule culture Eskimos.

In Figure II - 26 is a listing of historic[6] Native places and their current status. The locations of these places is also shown in Figure II - 27. While little or no demographic research has been conducted in this region, it can generally be said that population movements within the region have taken place in the following directions:

... The people from Pt. Lay and west of the Utukok River along the Chukchi Sea -- to Point Hope;

... The people between the Utukok and Point Franklin inland along the Kuk River -- to Wainwright or first there and then to Barrow;

---

[4] Robert F. Spencer, *The North Alaskan Eskimo: A Study in Ecology and Society*. Smithsonian Institution, Bureau of American Ethnology, Bulletin 171. Washington: United States Government Printing Office, 1959.

[5] *Ibid.*

[6] For purposes here "historic" means, generally, of 19th Century record.

... The people between Point Franklin and the Sagavanirktok River and inland to the Colville -- to Barrow;

... The people east of the Sagavanirktok River into Canada -- to Kaktovik on Barter Island or -- to Barrow;

... The people along the Colville River traveled to its delta and then -- to Barrow;

... The people along the Colville tributaries of the Killik and Anaktuvuk Rivers and from the headwaters of the Chandalar -- to Anaktuvuk Pass or, rejecting the inland way of life,-- to Barrow; and

... The people from the headwaters of the Noatak and divide reaches of the Colville Rivers -- to Kivalina and on later to Pt. Hope.

In the Tariamiut maritime culture a greater degree of permanence, in occupancy, was achieved than with the inland Nuunanmiut peoples.

> Coastal villages were well integrated around dance houses and the concept of the whaling crew and its leader. Moreover, the maritime villages [Tariamiut] came to have fairly well-defined territories in which their respective residents moved. Not that these were in any sense owned; in the main, this came about as the result of exploitation of familiar terrain. It was possible, and still remains so, to determine a man's place of origin by noting who his relatives were and also by his speech, since each village had its own phonetic idiosyncrasy. The inland peoples, [Nuunamiut] while in the main definable as to local territory, tended to lack the incipient formalization of the concept of chieftainship. Because, as bands, they tended to move much more widely and to lack fixed villages, they become somewhat more difficult to name. This is complicated further by the fact that although such local groups had names for themselves, the name might or might not coincide with the name applied to them by the coastal peoples.[7]

Despite this lack of uniformity of names, either as designations for local bands or for topographic and geographic features, and the fact that Eskimo culture requires an exactness of names in respect both to ethnic groups and places, there has been much confusion in Eskimo group names, due to the point of reference from which names are applied.

Although environmental factors determined village location, other forces have affected community permanence, growth or decline. Knowledge of these other forces is helpful and may be brought out by example.

> At the Point, on the northernmost tip of land of the North American mainland, was the now abandoned village of nuwuk ... In 1852-53, nuwuk had 54 inhabited houses, with a population of 309, 166 of which were men. In 1854 a fuel shortage had reduced the number of inhabited houses to 48. Dr. John Simpson, whose observations these are, believed the population to be declining, a fact which he substantiated by the presence of an abandoned dance house at nuwuk and of several ruined dwellings. Forty persons had died of influenza in 1851, and again, in 1853-54, there were 27 deaths, mainly the result of starvation. When the next observations were made, in 1882-83, nuwuk had a population of 150. [Emphasis added.]
>
> ....
>
> Several village units combined into one at the site of the modern Barrow village. This is the location of the older town of utkeaŋvik ... Like nuwuk, this village grew and declined in population depending on circumstances. Simpson lists 40 houses and 250 people in 1852-53, with a decline as a result of famine in 1853-54, 40 deaths having occurred... [Emphasis added.]
>
> ....
>
> Leaving Wainwright, one passes another area of extremely sparse population before the next major settlement is reached. This is Icy Cape, a village which was very important a century ago as a native whaling center but which was abandoned no later than 1890. The building of the whaling station at Cape Smythe by New England whalers evidently caused the desertion of several previously inhabited hamlets and villages. It also increased momentarily the population of Barrow village...[8] [Emphasis added.]

---

[7] Spencer, *op. cit.*

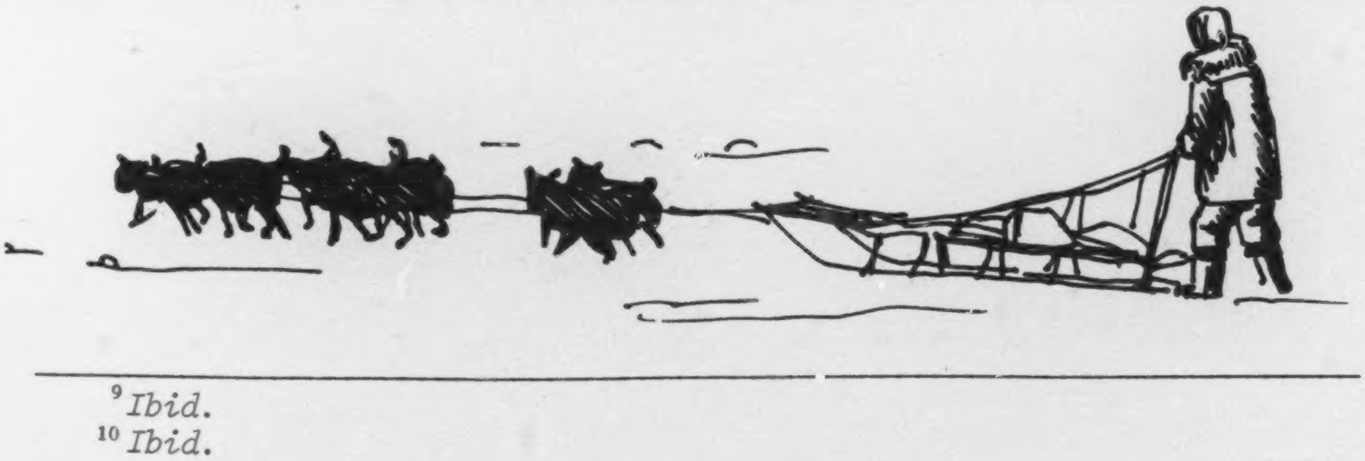
[8] *Ibid.*

To the major groupings of coastal people (Tareumiut) may be added the many minor settlements, some of temporary, some of permanent duration, which effectively spread the people along the coast for the most effective harvest of the marine animal resource.

> These temporary hamlets along the coasts tend to render the matter of population estimates somewhat difficult. As has been seen from the estimates provided by the different 19th century explorers of the region, population fluctuated greatly. That it may have been considerably greater in the remote past is indicated by the richness of archeological materials, the 600 dwellings at Ipiutak, for example, the large and presumably communal houses at Birnirk, and the many ruins, both near modern and ancient, scattered along the coasts. According to the census obtained in 1881-83 by the Point Barrow Expedition, and adding these to the known figures for the Point Hope-Point Lay area for the same period, population of slightly less than 1,000 may be supposed for the coastal villages in the late 19th century. This would represent a considerable decrease, perhaps by as many as 500, from the period of the 1850's, a loss attributable in large measure to the European diseases to which the Eskimo lacked resistance, such as measles, influenza, and tuberculosis, and to famine. In the recent period, the tendency has been to abandon the scattered dwellings and to converge on the towns. This has been the result of the building of schools, mission churches, and hospitals established either by mission bodies or the United States Department of the Interior. Educational and medical care provided at Barrow, for example, effectively brought about the end of the nuwuk settlement, the people having gradually given up residence there and built new homes at Barrow village. The process of change [however] was a slow one ...
>
> Throughout the 20th century, it would appear that the coastal villages have held their own in terms of population. This is true, however, only in a superficial sense. The establishment of coastal villages as administrative centers has affected the resettlement of inland Eskimo with the result that the nuunamiut have virtually ceased to exist. Many have now chosen to live on the coast in the four whaling villages of Barrow, Wainwright, Point Lay, and Point Hope, or they have elected to settle

> on the coast farther to the south, such as at kivalina, on the Noatak River, or at Kotzebue at Hotham Inlet. Thus, if the coastal population has remained stable, it has been at the expense of the marked decrease of inland groups.9 [Emphasis added.]
>
> The inland [Nuunamiut] Eskimo are thus virtually gone. There is a vanishing group still resident north of the Brooks Range. This is an alliance of two formerly fairly large bands, the killigmiut, a group taking its name from the Killik River, and the tulugagmiut, residents of Anaktuvuk Pass and named from Lake Tulugak, in the lower reaches of the pass... The group hunts over a wide area, from Chandler Lake to the many water-courses of the Colville. [Emphasis added.]
>
> As the more recent history of the inland zone is considered, however, it is seen that the ethnic groups were once fairly large. Because of the diffuse nature of the way of life, it is again difficult to obtain either an accurate census or adequate designations for the groups themselves. The principal basis for estimates of population must come from natives themselves who can recall the assemblages at the height of the season of trading. Although these congregations varied in size from year to year, there is no doubt that the majority of the inland Eskimo visited them, being forced by necessity to go at least once yearly to the coast to obtain the necessary commodity of seal oil.[10]

The historic gatherings at the great trading centers of the Arctic were absolutely essential to the way of life and settlement patterns that existed prior to European contact. There were four trading centers and it is mainly from the glimpses gained of these assemblages that we know much of the Nuunamiut.



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[9] *Ibid.*

[10] *Ibid.*

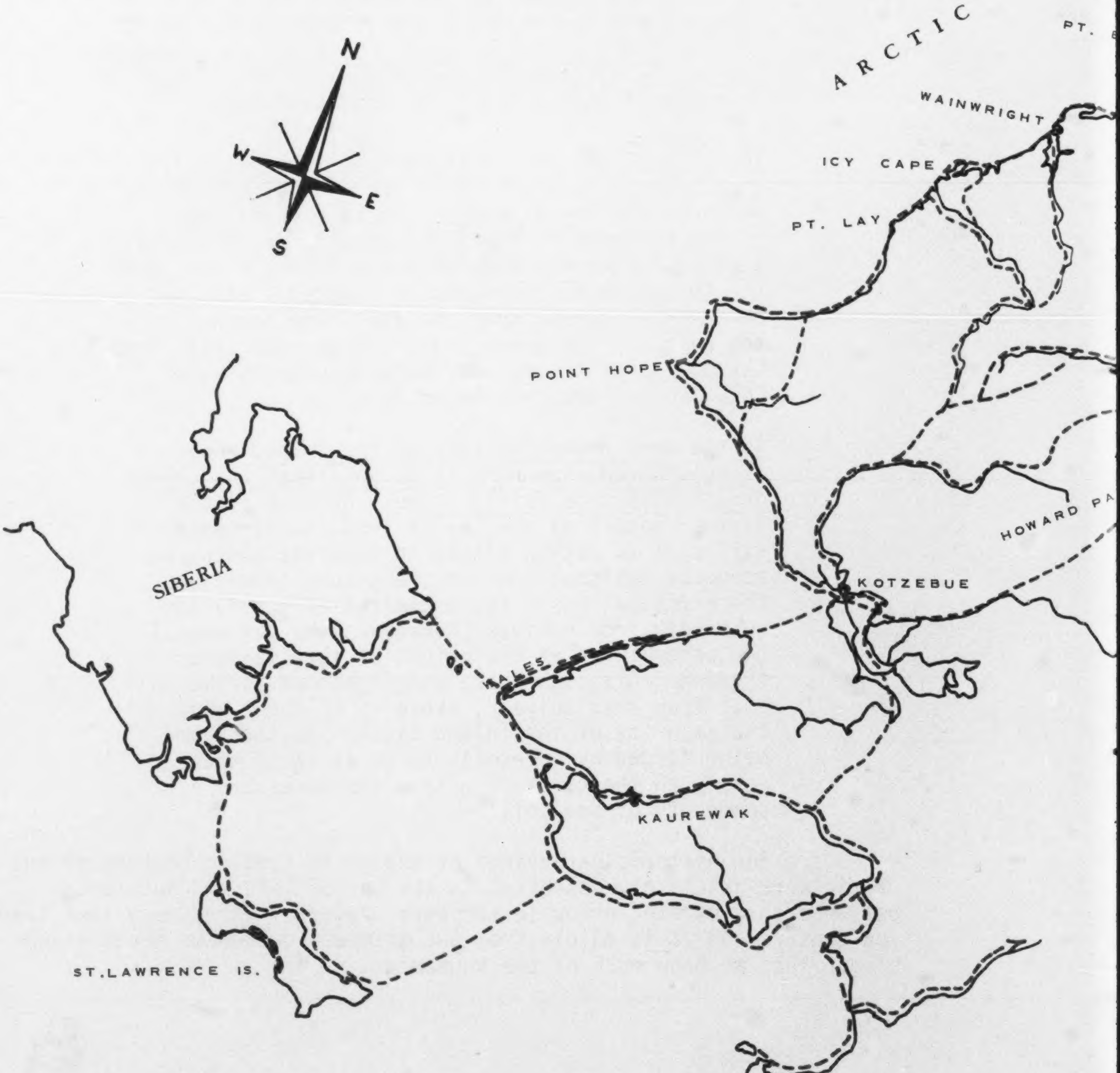
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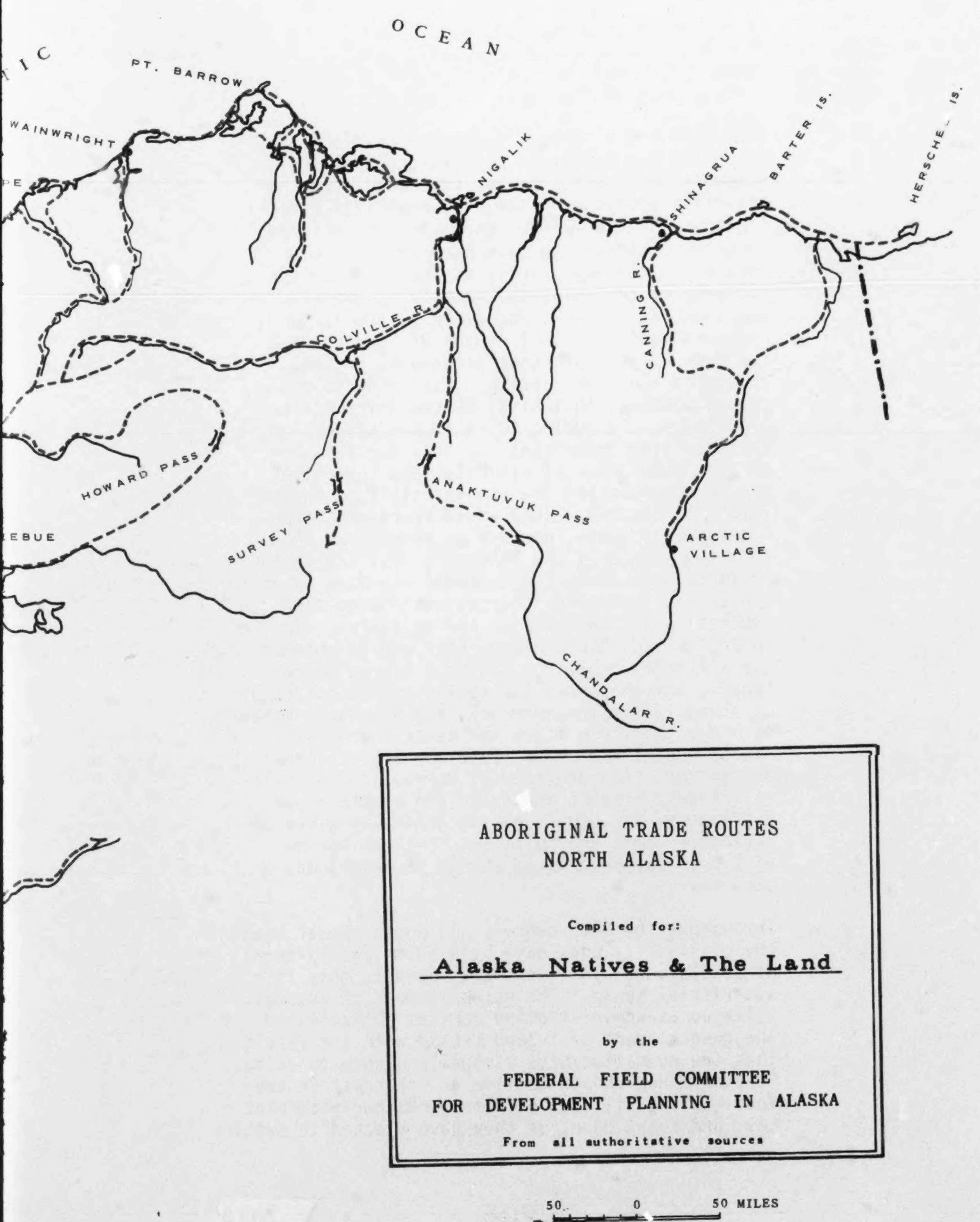
FIG. III - 25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HOWARD PASS
SURVEY PASS
ANAKTUVUK PASS
ARCTIC VILLAGE
EBUE
CHANDALAR R.
50 0 50 MILES

ABORIGINAL TRADE ROUTES
NORTH ALASKA

Compiled for:

Alaska Natives & The Land

by the

FEDERAL FIELD COMMITTEE
FOR DEVELOPMENT PLANNING IN ALASKA

From all authoritative sources

> The first [trade center] at Cape Prince of Wales was a port of entry for Asiatic wares. Here the Siberian Eskimo met the Eskimo from the region of Norton Sound. Once trading at this center had been concluded, the Cape Prince of Wales Eskimo sailed to the second major rendezvous near Kotzebue. At this center, inland Eskimo of the Noatak and Kobuk rivers obtained trade goods of Asiatic origin, which they then took back with them in the fall. The following spring these Eskimo brought goods down the Colville River to the now-abandoned village of Nirlik on the Beaufort Sea, where active commerce took place with the nearby Point Barrow Eskimo. Iron and copper kettles, double-edged knives, tobacco, beads, tin for making pipes, and such items of inland Eskimo manufacture as deer skins, fox fur, feathers for headdresses, and arrows were exchanged for whale and seal oil, whalebone, walrus tusks, sealskin, and other maritime products.
>
> Still later in the summer the Point Barrow Eskimo continued east along the coast to Barter Island, the fourth center, where, with the Mackenzie Eskimo and north Athapascan Indians, they exchanged surplus Russian and inland Eskimo goods for *muktuk* (whale skin), stone lamps, English knives, beads, guns, and ammunition. The English trade goods were obtained from the Mackenzie post of the Hudson's Bay Company. During the following winter some Point Barrow Eskimo regularly sledded to Point Hope where they traded goods previously received from the Mackenzie delta Eskimo.
>
> This important trading system, which had been in existence for many years, was halted with the advent of extensive commercial whaling in the north Bering and Chukchi seas beginning in 1848. Whalers transporting goods chiefly in their own ships and distributing them directly to the Eskimo effectively curtailed the native traders, who could offer little in the way of competition. This, in turn, had a dramatic effect on the inland Eskimo. Many inlanders, no longer able to obtain trade goods upon which they were quite dependent, were forced to move to the coastal villages and learn a new way of life.[11]

Only a few records exist to describe the trade gatherings and the people that attended, but from these meetings of 1500 people and more, population estimates have emerged for the inland people. Several authors concur on an estimate of 3,000 during the period of 1895 to 1905.[12]

From this number they have dropped away to an actual count of 1,400 interior residents north and west of the Brooks Range in 1939 -- to about 900 in 1948 -- to a population today at Anaktuvuk, a reported small band in the headwaters of the Colville and Noatak, and isolated seasonally nomadic families and groups along several drainages.

After the breakdown of the coastal-interior trade pattern, other factors came into play which help to account for the Nuunamiut movement to the coast and later returns to the Killik and Anaktuvuk regions.

> In 1908 the fall in demand for whalebone forced charles Brower out of the whaling business, but he turned immediately to fur trading. He outfitted many trappers, and those Nunamiut living inland brought their furs to Brower in exchange for supplies. Before World War I, Brower's fur trade at Point Barrow became so profitable that he opened stations at Wainwright and Beechey Point. By 1920, the last Nunamiut had moved to the coast where trapping was good and trade supplies easy to obtain. The decline in caribou population added to the impetus to leave the Brooks Range.
>
> After 1920, many Nunamiut continued to maintain a group identity as they gathered along the north coast of Alaska some distance east of Point Barrow. Brower, occasional fur-trading schooners, and the Hudson's Bay Company constituted the trade contacts. During the 1930's the fur trade along the north Arctic coast deteriorated, and Brower slowly pulled out...
>
> ....

---

[11] Norman A. Chance, *The Eskimo of North Alaska.* New York: Holt, Rinehart and Winston, 1967.

[12] Spencer, *op. cit.*

FIGURE III - 26

HISTORIC NATIVE PLACES AND CURRENT STATUS

ARCTIC SLOPE REGION

NATIVE GROUP	HISTORIC PLACES	EXISTING SETTLEMENT POPULATIONS 25 - 299	300 - 999	1000 +	STATUS UNKNOWN	SEASONAL CAMP SITE	ABANDONED	ANTIQUITY SITE
TAREMIUT (MARITIME ESKIMO)								
Tikeramiut	'Inhabitants of the forefinger', at Point Hope. Their settlement was Tikera (Tigera) or Nuna, now Point Hope. Population in 1900 - 295.		X					X
	Kukpuk river camps.[a]					X		
	Wiivak, at Cape Lisburne.						X	
Kukparungmiut	On the Arctic Ocean between Point Belcher and Cape Beaufort. Their settlements were:							
	Kokolik, at Point Lay (east of Point Lay near mouth of Kukolik River). Population in 1880 - 30. Near present-day Point Lay, where population has dropped from 117 in 1939 to 2 today. (Also used by others seasonally.)					X		
	Naokok - whaling place (1923).						X	
Utukamiut[b]	Originating at Icy Cape, they ranged along the Arctic coast from Point Hope to Wainwright Inlet,[c] and inland to Colville River. Their settlements were:							
	Kaiaksekawik, on the north side of Icy Cape.					X		
	Mitliktavik, on Kasegaluk Lagoon.					X		
	Akeonik, 4 miles south of Icy Cape. (Reindeer camp)						X	
	Utuka, at Icy Cape 48 miles southwest of Wainwright. Var. Otokkok. Population in 1884 - 50; population of Icy Cape in 1923 - 40.					X		
	Tolageak, old abandoned place at mouth of Utukok River, Kasegaluk Lagoon.						X	
Kunmiut[d]	On the Arctic coast and along the Kuk River above Wainwright Inlet. Their settlements were:							
	Olgonik, present-day Wainwright. Several villages have existed on the land between Wainwright Inlet and the sea, the most recent being Wainwright.		X					
	Kilimantavi[e], on the Arctic coast 14 miles southwest of Wainwright Inlet.					X		
	Anatuk or Anaktuk, on the Kuk River.					X		
	Kangik, on Kuk River.					X		
Sidarumiut	West of Point Barrow to Wainwright Inlet. Their villages were:							
	Atanik, 7 miles northeast of Point Belcher. Recorded by British Adm 1827, Zagoskin in 1847. Population in 1880 - 34. A permanent population existed here in 1939 of 19.					X		
	Attenok, on Seahorse Islands.[f] Referenced in 1890.					X		
	Charnokruit, on Seahorse Islands. Population in 1890 - 162.					X		
	Nunaria, near Point Belcher; on charts in 1827 -- abandoned by 1883.						X	
	Perignak, on Seahorse Islands. Referenced in 1890.					X		
	Pingoshugarun, "on Seahorse Islands". Referenced in 1827; actually on Point Franklin. Population in 1880 - 29.					X		
	Sidaru, between Wainwright Inlet and Point Belcher. Population in 1882 - 50. Abandoned by 1905.					X		
Utkiavinmiut	On the Arctic coast west of Point Barrow. Their settlements were:							
	Ireniviq, located on the coast 15 miles southwest of Point Barrow.					X		

NATIVE GROUP	HISTORIC PLACES	EXISTING SETTLEMENT POPULATIONS			STATUS UNKNOWN	SEASONAL CAMP SITE	ABANDONED	ANTIQUITY SITE
		25 - 299	300 - 999	1000 +				
Utkiavinmiut (Contd)	Imekpung camp, near Naval Station, Point Barrow.					x		
	Tulimanak or Ikiak at MacKay Inlet on winter trail.					x		
	Sinyu (summer village), 2 miles northeast of Point Barrow.					x		
	Utkiakvik, at Cape Smythe. Reported in 1826. Site of present-day Barrow.			x				
	Walakpa, located 11 miles southeast of Barrow. Reported in 1826.					x		
	Sinaru, 18 miles southwest of Barrow. Summer camp and reindeer camp - 1898.					x		
	Sinaat or Nulavik, camp site.					x		
Nukwukmiut	At Point Barrow. Their settlements were:							
	Isutkwa, on the site of the U. S. Signal Station at Point Barrow.				x			
	Nuwuk, at Point Barrow (the point, now an island -- site of a whaling camp). Population in 1885 - 309.					x		
	Perginik (also Bernick or Pernyu) on the western shore of Elson Bay, 4 miles southwest of Point Barrow.							x
	Ongovehenok, located on the Kugrua River near Point Barrow. Reported in 1890.				x			
	Anakruak, camps at Point Poleakoon on winter trail.					x		
	Alaktak, site of former Half Moon Three Reindeer ranch in 1940's.					x		
	Kokruagarok, site near Pitt Point.						x	
	Kolorik, site near Avatanak Bight.						x	
	Beechey Point Village, 25 miles east of Colville River. Population in 1919 - 66; population in 1939 - 12.					x		
	Brower Village, Point Brower. Named by Leffingwell in 1919. Located at west entrance to Foggy Island Bay, Beaufort Sea, 35 miles southeast of Beechey Point after Charles Brower, trader, in 1939.					x		
	Ishuk or Esook (Cape Halkett), west point of entrance to Harrison Bay, Beaufort Sea. Population in 1939 - 83; population in 1939 - 31. In 1939 11 persons were reported at "Harrison Bay."					x		
	Nooiksut or Colville (Colville) River Village. Population in 1939 - 86. Near ancient trading place of Olitok. Also, 1939 Census lists 13 persons at Oletak, believed to be this same locality.	x						
	Ipersua (not accurately located).				x			
	Kuosugru camp, on a dry place inland from Point Barrow. Referenced in 1892.				x			
	Kuogaguruk camp, located 16 miles southwest of Point Barrow.					x		
	Akilloag camp, six miles southeast of Point Barrow. Var. Nakeduxo. Reported in 1889 and 1925.				x			
	Nunavik, at Nunavak Bay.					x		
	Nupawrax camp near Walakpa Bay. Var. Nunaktuau. Reported in 1885 and in 1959.					x		
	Pengnok, near Cape Smythe. Reported in 1885 as village or camp.					x		
	Sakamna (summer camp), inland from Point Barrow. Reported in 1892 and 1910.				x			

Other occupied places west along the coast have been as follows, and may still be seasonal camp sites; buildings exist.[9]

Tigvariak Island, Mikkelsen Bay, Point McIntyre

Konganevik Point } This general area at mouth of Canning
} River was historic trade meeting place
Flaxman Island } called Shinagru.

Sources:

NATIVE GROUP	HISTORIC PLACES	EXISTING SETTLEMENT POPULATIONS 25 - 299	300 - 999	1000 +	STATUS UNKNOWN	SEASONAL CAMP SITE	ABANDONED	ANTIQUITY SITE
NUUNAMIUT (INLAND ESKIMOS)								
Kevalingamiut[h]	On the coast of the Arctic Ocean, Chukchi Sea from Cape Seppings and Cape Drusenstern inland to Noatak River. Their settlements in this region were:							
	Ipnot, at Cape Thompson. Population in 1880 - 40.						X	
	Kechemudluk, at Cape Seppings. Population in 1880 - 50.						X	
(The following Inland People had few permanent places; they were nomads, yet they had territories -- recall that their territories were across a real desert.)								
Kanianermiut or Kanianigmiut	On the headwaters of the Colville River drainage.							
Noatagmiut or Noatakmiut	On the headwaters of the Noatak River and across into parts of the Upper Colville River.							
Killinermiut[i] or Killikmiut	Along the drainage of the Killik River and the middle course of the Colville River.	(The 1939 Census indicates 39 persons at "Kikkik River.")						
Tulugagmiut[j] or Tulugakmiut	Along the Chandler and Anaktuvuk River drainages. The present settlement is Anaktuvuk Pass.	X						
Itkillikmiut	Along the Itkillik River.							
Koluguragmiut	Along the Meade (or Kolukruak) River.							
Ikpikpagmiut or Ikpikpugmiut	Along the Ikpiktuk River.							
Kagmalirmiut or Kanmalikmiut	On the lower course of the Colville River, but not extending to its mouth and along tributaries towards Anaktuvuk Pass.							
(Smaller, less permanent bands also were as follows:)								
Kunpigimiut	On lower Colville River.							
Sagavanirktokmiut	Along Sagavanirktok River.							
Ivishakmiut	Along Ivishak River.							
Kugruakmiut	Along Canning River.							
THULE CULTURE ESKIMOS								
Tikixtagmiut or Kaktovigmiut	On Barter Island. Their settlement is:							
	Kaktovik	X						
	Elupak, an old village site.						X	
Palaktokmiut	Vicinity of Demarcation Point.							
	Kuluruak, southeast end of Icy Reef, 2.5 miles west of Demarcation Point.						X	
	Gordon, site of trading post of Thomas Gordon at Demarcation Point.						X	
Kikiktarugmiut	On Herschel Island, Canada.							

---

[a] Along the Kukpuk River, which enters the Marryatt Inlet near Point Hope are several fish camp sites -- Itublarak, Kukpuk, Ogsachak, Kayak and Alolukrok; these sites probably have historic record.

[b] Authorities disagree whether these people historically were maritime or inland oriented. The preponderance of opinion is that they were nuunamiut, but in any event, today their orientation is to the seacoast.

[c] Although this coast is now nearly devoid of permanent settlement, Wainwright people range its entirety. Depending upon ice conditions, the main activities for spotted seal hunting and whaling can shift towards Icy Cape.

[d] Authorities disagree whether these people historically were maritime or inland oriented. In any event, today their orientation is to the seacoast.

[e] Means "killing ducks with slingshot."

[f] Many seasonal camp sites of continual yearly occupancy have existed and still exist on these islands and on the mainland along the shore of Peard Bay.

[g] Other settled places in both historic and recent times were in the Cross Island, Prudhoe Bay, and Flaxman Island areas.

[h] Originally an offshoot of the Nunatagmiut from the upper reaches of the Noatak River and allegedly reinforced by displaced persons from the Kauwerak and Kinugumiut, they have not become coastal people intermingling with or previously expelling the Tikeramiut from their territories about Point Hope (Hodge, *Handbook of American Indians*).

[i] A combination of these people comprise the present place of Anaktuvuk.

[j] A combination of these people comprise the present place of Anaktuvuk.

ABANDONED ANTIQUITY SITE

X

X

X

X

X

uk, Ogsachak, Kayak and
is that they were
n ice conditions, the
ientation is to the

nd along the shore of

aced persons from the
heir territories about

Sources: Giddings, J. Louis. *Ancient Men of The Arctic.* New York: Alfred A. Knopf, 1967.

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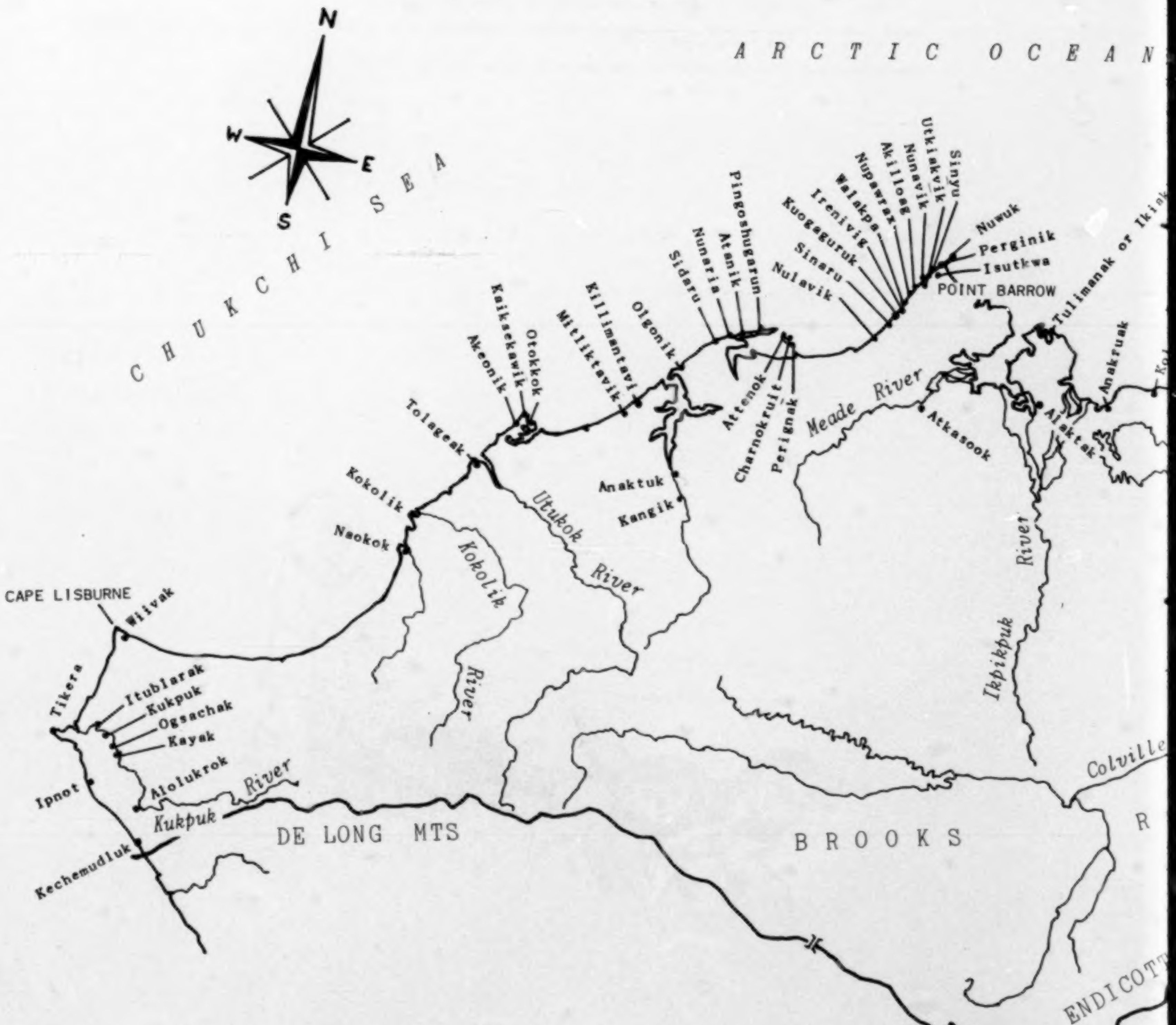
Compilation by David M. Hickok, Federal Field Committee for Development Planning in Alaska.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Walakpa
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Sinaru
Nulavik
Pingoshugarun
Atanik
Nunaria
Sidaru
Nuwuk
Perginik
Isutkwa
POINT BARROW
Tulimanak or Ikiak
Anakruak
Alaktak
Atkasook
Meade River
Attenok
Charnokruit
Perignak
Olgonik
Killimantavi
Mitliktavik
Kaiksekawik
Otokkok
Akeonik
Tolageak
Kokolik
Naokok
Anaktuk
Kangik
Utukok River
Kokolik River
Ikpikpuk River
CAPE LISBURNE
Wilvak
Tikera
Itublarak
Kukpuk
Ogsachak
Kayak
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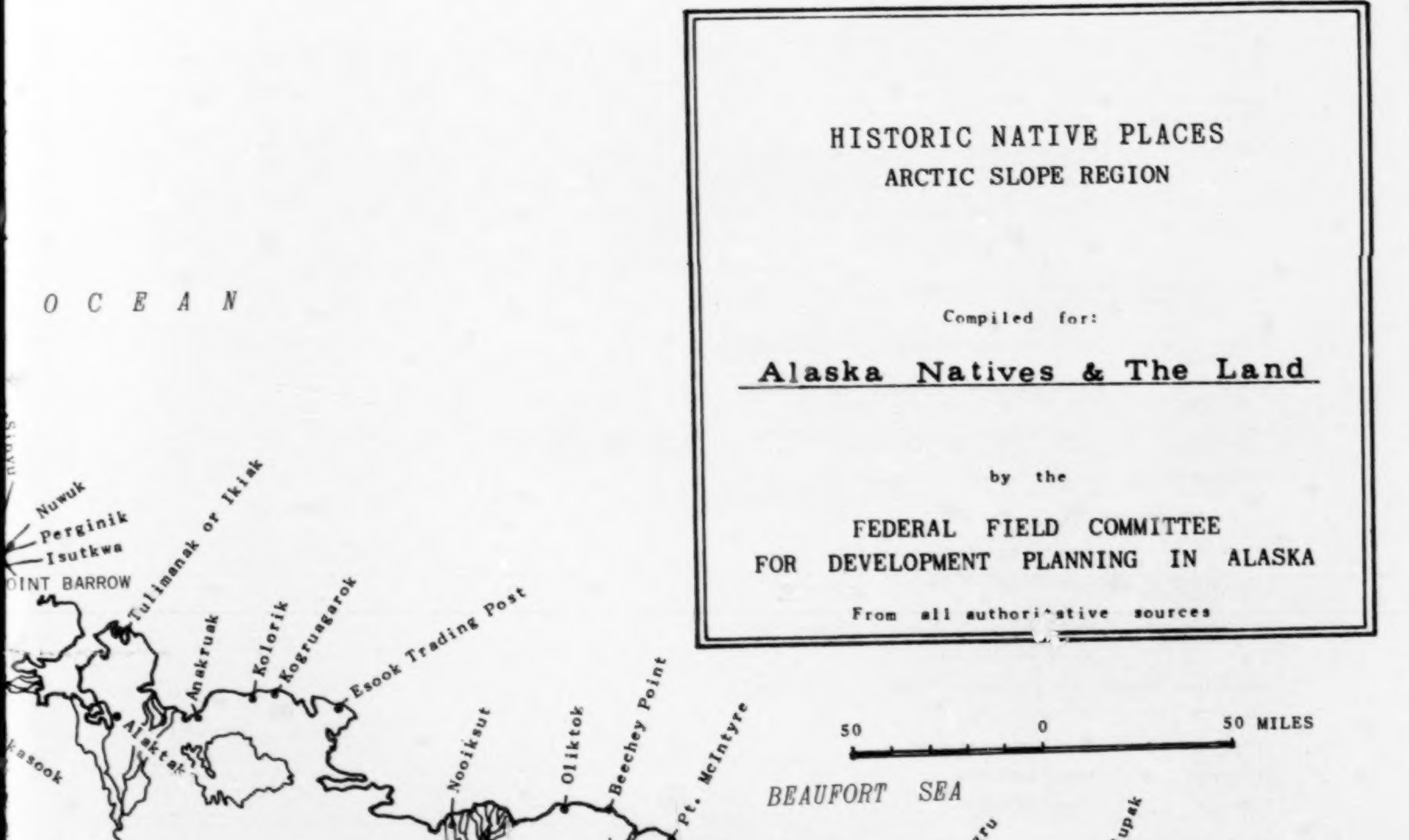
FIGURE III -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ARCTIC SLOPE REGION
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50 MILES
OCEAN
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OINT BARROW
Tulimanak or Ikiak
Anakruak
Kolorik
Kogruagarok
Esook Trading Post
Alaktak
kasook
Nooiksut
Oliktok
Beechey Point
Pt. McIntyre
BEAUFORT SEA
Brower Village
Tigvariak Island
Shinagru
Elupak
Kuluruak
Gordon
CANADA
U.S.A.
Ikpikpuk River
Colville River
RANGE
S
Anaktuvuk River
River
Itkillik
Kuparuk River
Sagavanirktok River
Canning River
ROMANZOF MTS
Kongakut River
ENDICOTT MTS

FIGURE III - 27

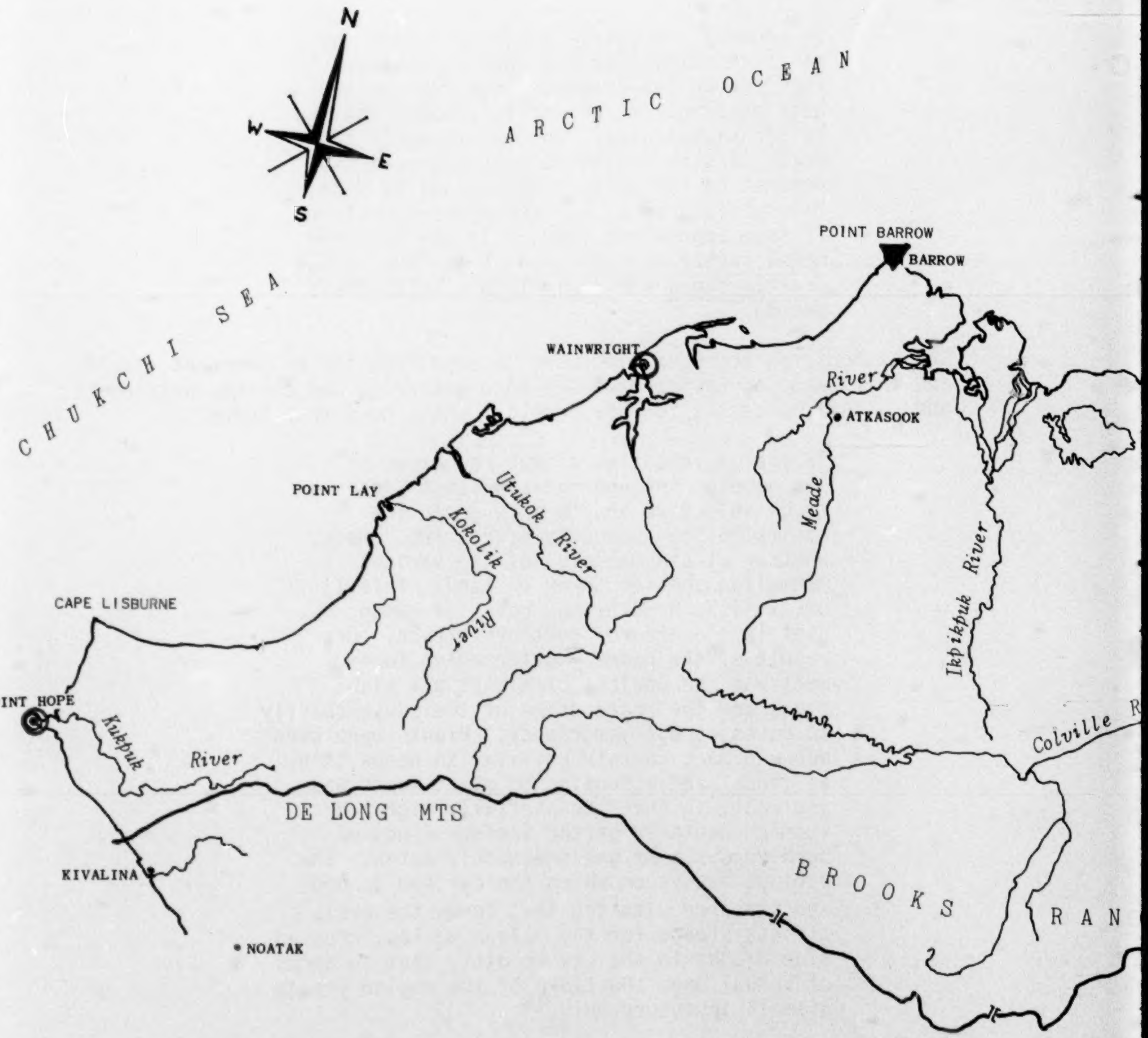
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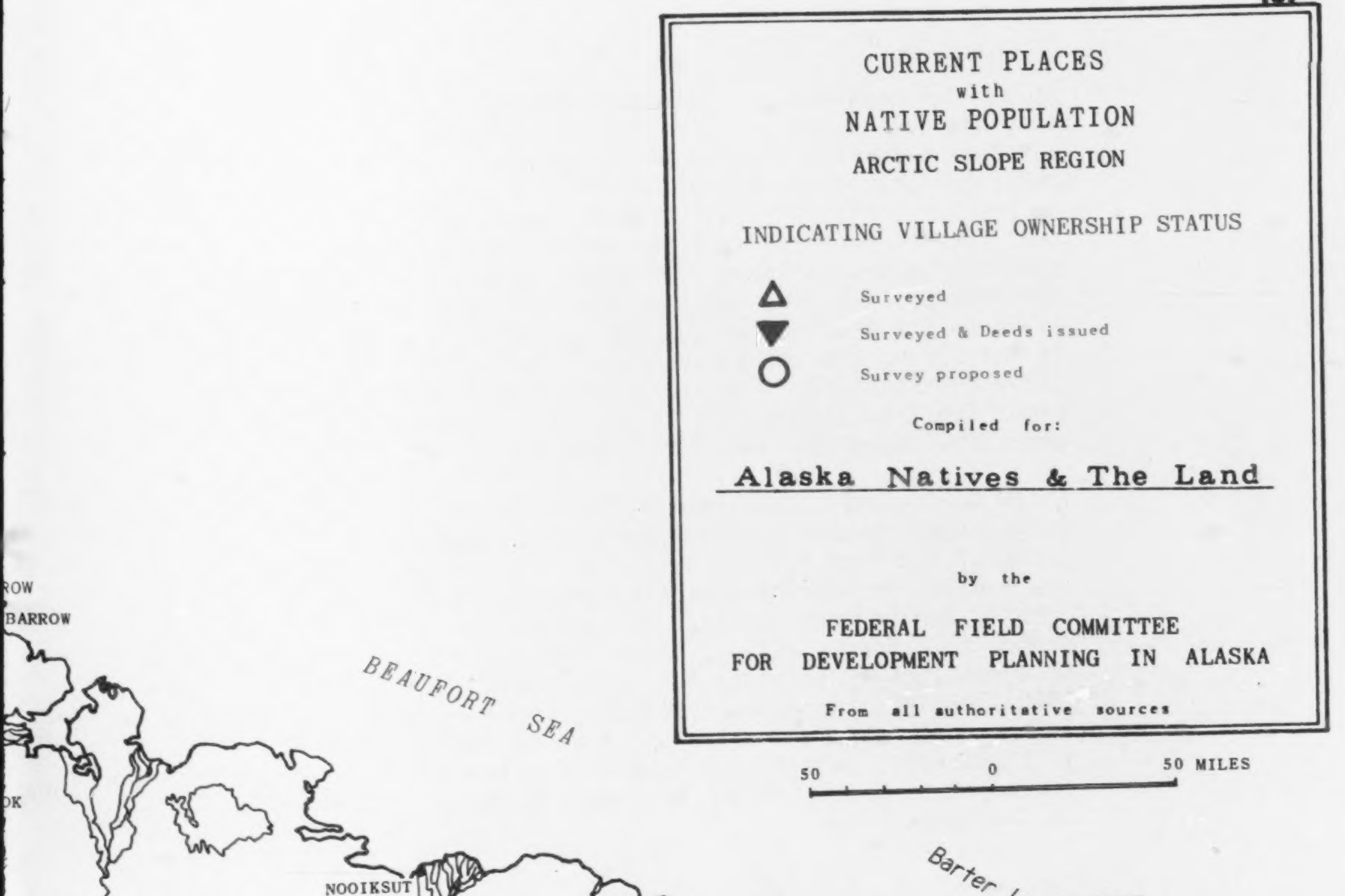
FIGURE III - 2


CURRENT PLACES
with
NATIVE POPULATION
ARCTIC SLOPE REGION
INDICATING VILLAGE OWNERSHIP STATUS
△ Surveyed
▼ Surveyed & Deeds issued
○ Survey proposed
Compiled for:
Alaska Natives & The Land
by the
FEDERAL FIELD COMMITTEE
FOR DEVELOPMENT PLANNING IN ALASKA
From all authoritative sources
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50 MILES
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BARROW
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BEAUFORT SEA
NOOIKSUT
Barter Is.
KAKTOVIK
Ikpikpuk River
Colville River
Anaktuvuk River
Itkillik River
Kupuruk River
Sagavanirktok River
Canning River
Kongakut River
ROMANZOF MTS
K S
R A N G E
ANAKTUVUK PASS
ARCTIC VILLAGE
ENDICOTT MTS

FIGURE III - 28

As the fur business grew steadily worse, many Nunamiut moved to Point Barrow or other population centers (including Fairbanks). By 1937, the possibilities for making a living on the north Alaskan coast became so poor that several Nunamiut families decided to return to the Brooks Range. In 1938, three families proceeded by umiak up the Colville River to its tributaries to hunt and trap. In the spring they came back to the coast to trade for supplies. They returned, and several other families joined them in the home country where they have remained until this day.

After the Nunamiut returned to the Brooks Range, they resumed a seminomadic life. One group of families settled in the Killik Valley and another in the Chandler Lake area. Frequently two or more families trapped for a season in a nearby valley. To obtain supplies some families traveled to the north coast. By 1940, however, there was no trading to be done on the north coast, and the Nunamiut turned to the south. Once a year several families journeyed to Bettles or to the small villages on the Kobuk River.

....

In 1947 the Nunamiut were living in two groups: five families at Chandler Lake and eight families on the Killik River. In 1949 the Chandler Lake families moved to Tulugak Lake in the Anaktuvuk Valley near the northern mountain line. Very shortly thereafter the Killik River families also moved to Tulugak Lake. In 1951, mail service was established on a regular monthly basis, and most of the families moved to the summit of Anaktuvuk Pass. In 1960 the last family joined the village at the summit.[13]

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[13] Nicholas J. Gubser, *The Nunamiut Eskimos Hunters of Caribou.* New Haven and London: Yale University Press, 1965.

Environmental Livelihood Patterns

Basically, life support in the Arctic for the Eskimo is derived from the same sources as before the white man arrived. Our government and our culture have created changes in the *way* resources are taken, but not in *where* they are taken and the uses that are made of them.

> In general the yearly cycle of Eskimo subsistence activities has been maintained right up to the present. The changes that have occurred are primarily those relating to techniques used. In many respects the north Alaskan Eskimo have become more dependent on the outside world, not so much for subsistence as for the means to obtain it (see Sonnenfeld 1960). It has been the means rather than the ends that have varied greatly since the early 1900's.[14] [Emphasis added].

The historic patterns of life were derived from the environment itself, and the demanding environment set food gathering and choice, settlement and cultural patterns for the people. These hold true today.

> In the exploitation of the resources of his domain, the aboriginal Eskimo chose to be selective and to make exclusive capital of the products of hunting. Meat, whether of sea mammals, of the various mammalian species taken on land, of fowl, or of fish, remains the basis of human diet in the area of northern Alaska. One result of the primary orientation toward meat was the neglect of almost all plant foods and the restriction of their use chiefly to cases of dire emergency. Plants were used more to meet certain utilitarian needs than as food. The attention to plant foods was indirect, in that the partially digested stomach contents of the various kinds of herbivorous game was frequently eaten. The various mosses on which the caribou depend, the seaborne plankton that forms the basis of subsistence for the baleen whales, created side dishes in the Eskimo diet. But in terms of actual use, the flora of the region yields a small inventory only.[15]

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[14] Chance, *op. cit.*, p. 42.
[15] Spencer, *op. cit.*

The Nuunamiut, people of the inland regions, made far greater use of the available plant life than did the coastal Eskimo. For example, many varieties of berries were collected and formed the most important contribution of vegetable foods to the Native diet. They were mixed with caribou fat, soaked in seal oil, and pounded into meat to make pemmican;and,in addition to their sustenance use,they became an important trade item with the coast. Besides the berries obtained by trade from the Nuunamiut and the paunch contents of herbivores, the coastal Eskimo of this region had no use for plant foods.

The inland bands also made extensive use of plants for other purposes. Spruce bark was shredded and used to enforce cordage, spruce roots were sometimes eaten, willows were used in home and sled construction and for fuel, sphagnum moss served for boat liners and mosses for infant diapers and for lamp wicks.

As tobacco became more available in the 19th century, it was highly prized and its supply stretched out by adding cottonwood bark, willow bark, fungi, and grasses.

Driftwood along the coast was found in large quantities and served as the source of supply for the making of house beams, planking, sleds, weapons and other necessities. The Nuunamiut,too,depended upon this source of supply and obtained logs and planks by trade from the coast.

> Unconcerned with plants as food, and dependent on driftwood for meeting various important needs, the maritime Eskimo made no effort to utilize the local vegetation. Even if the inland Eskimo made greater use of plants, it is clear that some needs which might have been met by a fuller use of vegetable products were filled in other ways.
>
> The Eskimo food quest was thus centered wholly in the wildlife of the region. It is this, in its various manifestations, which underlies adjustments in ecology and culture. In the patterned dichotomy of existence are seen the differences of inland nomadism, of bands organized around caribou hunting, as against the settled village life with its whaling emphasis. In both settings, despite the uniformities of language and kinship organization, there were vast differences in the social forms which went beyond kinship and in ceremonial life. The relations of man to the native fauna must accordingly be conceived in terms of the two primary orientations. Of the two, the maritime Eskimo had the far richer life, able as they were to direct attention to inland hunting on the

> tundra when not engaged in sea mammal pursuit. Thus, they hunted caribou in the summer and fall, fished extensively in the fresh-water streams, and were skilled in the uses of the various traps. In some measure, they thus acquired the skills of inland life while the reverse was not true; the inland Eskimo were not prepared to deal with the hazards of the sea, of whaling in the ice leads, or of sealing at breathing holes in the ice. But for the maritime Eskimo, inland hunting was largely an individual matter; it did not call for the communal enterprise characteristic of the nuunamiut or for the same ceremonial orientations.[16] [Emphasis added].

Without dwelling overly on the fauna important to the Eskimo subsistence harvest, some comment is nonetheless important to reiterate the unchanged importance of this resource to the people.

The whale provides focus for the human ecology of the taremiut. This is the bowhead whale (Balaena mysticetus, Linn.) which migrates through the Bering Strait as soon as ice conditions permit. Geography, currents and ice state keep the whales close inshore;and, from this environmental factor,the whaling culture of the Eskimos in this region between Point Hope and Point Barrow has been developed.

Along this coast these baleen whales appear in the opening offshore ice leads from late April to early June. As the ice leads open, life in Pt. Hope, or Wainwright or Barrow changes. Whaling is the thing of total importance -- jobs, the outside world, time and school can wait!

Whaling camps were historically, and are today, set up on the edges of the leads. The crews then -- as now -- pursued the whale in their umiaks. In historic times the attempt was made to place as many harpoons as possible in the whale and then as the animal tired and rose for air in the narrow lead a large stone-headed lance made the kill. Today only the means have changed.

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[16] *Ibid.*

> With the arrival of commercial whalers on the north Alaskan coast, the darting gun replaced the harpoon. Its particular advantage was that it carried a small explosive charge which, if well placed, could kill outright, or at least do enough damage to make unnecessary the long and dangerous chase. The shoulder gun, also introduced at this time, soon replaced the lance since it too was more efficient in ensuring a quick kill. By the end of the nineteenth century the traditional weapons had been completely replaced by the darting and shoulder guns.[17]

Similarly an outboard motor is used in the chase and a block and tackle makes the communal task of hauling out 30-40 or even 60 tons of whale a little bit easier.

The whaling season comes after the most critical end of winter. A successful season brings celebration; an unsuccessful one, death by starvation or at least limited rations and nutritional harm, and its conclusion starts a varied hunting pattern.

> Following the spring whale hunting the Eskimo turn their attention to hunting walrus and seal. During June and July these sea mammals drift north with the ice and can often be found directly in front of the coastal villages from Point Hope to Barrow. Walrus herds numbering between 50 and 100 animals are hunted by boat crews in much the same way as is the whale. Walrus rarely are found at Kaktovik due to the village's eastern location away from the regular migration path. Groups or individuals may hunt the smaller seals. When off-shore wind blows the ice close to the coast, Eskimo even may hunt seal from the shore line.
>
> Seal hunting, although it carries less prestige and provides less meat than the whale or walrus, is the basic staple of the Eskimo subsistence economy. Fluctuations in whale and walrus populations along the north Alaskan coast have always contributed to the subsistence stresses of the Eskimo. Seal, on the other hand, provide essentially the same products as the whale, and are accessible throughout much of the year.[18] [Emphasis added.]

The importance of the seal is reflected in the highly developed weapon technology and catch methodology which they effectively utilized and have only recently modified with the rifle.

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[18] *Ibi*

Caribou is the most important land mammal of the region. Historically, what the whale was to the taremiut the caribou was to the nuunamiut; and, although the inland Eskimo populations are now virtually gone, the historic importance of the animal to the Eskimo of Anaktuvuk Pass and of the coastal places remains.

> Its presence was vital to inland life and, like the whale on the coast, it became the keystone of economic, social, and religious activity ... The caribou ... spreads widely over the American Arctic and sub-Arctic, appearing in herds of literally thousands. Through the north Alaskan regions the migrations of these animals are quite complex and the relations of the Brooks Range herds to those farther to the south are only imperfectly understood. The caribou move through the passes of the Brooks Range ... several times yearly, the movements themselves being quite irregular and erratic. The unpredictability of the caribou migrations has long affected the patterning of settlement of the inland Eskimo, inasmuch as these groups are obliged to cover wide areas both in search of the herds and to follow them for long distances once they have been located. The animals tend to move northward through the passes between January and June, ... beginning with cows and calves, followed by bulls, and lastly, old bulls ... Calves are born on the Arctic slope side between April and June. By October ... [they] move southward again... In the Central Brooks Range, a not unusual pattern is seen in the movement northward along the Killik River, while the southward trek takes place along the Anaktuvuk River, through the pass of that name, and so to the south along the John River. Whatever the route of movement, one may expect to encounter herds of caribou along the foothills and adjacent tundra plain in the spring...

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[17] Chance, *op. cit.*

[18] *Ibid.*

> On the Arctic plain, the herds tend to break into eastern and western sections. Some stragglers remain in or near the passes, while advance guards may reach the coasts at various points. The patterning of movement has evidently changed in recent years. Murdoch mentions the presence of caribou in spring along the Ikpikpuk, Meade, and Kuaru Rivers, but indicates that the herds do not come to the coast or near it (Murdoch, 1885 a, p. 98). In recent years, however, fairly large herds have regularly been seen along the beaches to the south of Barrow village, along the Kuk River and Peard Bay. Since they appear in the areas close to the coast, they become an important source of food supply to the modern coastal Eskimo...[19]

Available evidence indicates that the caribou herds are larger now than at any time since the early years of the century. In fact their increase since the 1920's, together with poor conditions for making a living on the coast prompted the return of several Nuunamiut people to the Brooks Range in 1938.[20]

However great the environmental importance of the caribou, it was not the only ecological factor that brought about the actual disappearance of the inland Eskimo; the peoples of the coast also discontinued the patterns of trade on which the Nuunamiut so vitally depended. Once this took place, the inland Eskimo was forced to revise his way of life.

> The hunting of caribou among the inland Eskimo reached a high degree of specialization in aboriginal times, skills being involved in which the peoples of the coast did not wholly share. Caribou hunting by the tareumiut was more frequently an individual matter, or at least one in which several men might informally share. In the inland sections, however, the hunting was elaborated and communal, providing the basis for the structuring of lines of authority and prestige.[21] [Emphasis added].

Today the Nuunamiuts of Anaktuvuk Pass are becoming a sedentary people;and as such,their subsistence harvest practices have changed from a mobile hunting and trapping economy to one of localized hunting, tourist crafts and odd jobs. Although the caribou are basic, the people depend more on the caribou coming to them than their going to the caribou.

The people dwelling on the coast today are decendents of Taremiut and Nuunamiut. Some families with their inherited skills and attitudes naturally prefer the sea, others the interior from which to wrest their livelihood,but to both the caribou as a source of food is essential.

> Caribou is the most significant land mammal regularly hunted. Traditionally it provided a variety of food, sinew for sewing, antlers for implements, and skins for clothing, tents, and bedding. Meat and skin were the most important of these items, with skin serving for clothing even up to the present day. Caribou are sought in the summer, very often near the coast where they are easily accessible to the Eskimo. Aboriginally, caribou herds were driven into rivers, lakes, or corrals where the hunters could most easily ambush and kill them. Less frequently, lone caribou were stalked individually on the open tundra. At this time, the major weapon was the bow and arrow which had an effective range of thirty to fifty yards. Spears and knives were used at an ambush or other close-range kill. It was not until the beginning of the twentieth century when the rifle became a common weapon~~, that~~ the bow and arrow disappeared.
>
> Caribou frequently are hunted in the fall as well. Often a group of hunters from related families travel inland for several days searching for small herds migrating back toward the interior mountains. After a successful hunt, the Eskimo return to their village to distribute the meat equally among the families of those who made the trip.
>
> Eaten throughout the year, caribou meat constitutes a major source of the Eskimo diet. A full-time hunter with a family of five kills an average of twenty-four caribou each year. The average annual kill at Wainwright is 800 caribou (Milan 1958:28).[22]

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[19] Spencer, *op. cit.*
[20] Gubser, *op. cit.*
[21] Spencer, *op. cit.*
[22] Chance, *op. cit.*

Today, a variety of fish and wildlife species remain of basic importance to the eskimo way of life. Included are: bear: Arctic, grizzly and Polar; the wolf; silver, white and blue fox; the wolverine; seals: harbor, ringed and ribbon; the bearded seal; walrus; mountain or Dall sheep; a variety of squirrels, marmots, weasels and hares; and of great secondary dietary importance several species of waterfowl and their eggs and a host of fish species particularly the dog salmon, white fishes, grayling and various trout and the Tom Cod.[23]

A conclusion to the importance of the wildlife resource to the Eskimo livelihood can be gained from the comments in a recent special study of the Pt. Hope hunting pattern.

> Despite a maximum hunting effort during the thirty-three weeks from mid-September, 1959, to the first of May, 1960, Point Hope's minimum demand for meat was met or exceeded for only eleven weeks. Although these eleven fruitful weeks resulted in a net surplus of meat equal to the requirements of nine additional weeks, the surplus was largely due to a highly successful whaling season.
>
> Point Hope is now, as it always has been, a village oriented to subsistence living. In autumn, Kukpuk River fishing and caribou hunting prevent an undue drain on meat stored since spring, and aid greatly the hunting. During mid-winter, maximum hunting does not fill the daily meat demand. From February to late June, the village either achieves a surplus meat supply, which brings minimum living conditions for the coming year, or it fails in the late winter-spring hunt and suffers hardship. Earned income and other cash receipts may prevent disaster, but the greatest privations are caused by wants which money cannot satisfy. At no time can the village long foresake its hunting activity, and yet remain confident of the future. [Emphasis added].
>
> Any event which would prevent the Point Hope hunters from reaping a harvest during any month of the year, but most especially in those periods from mid-January to early July and from September to December, could bring profound and prolonged hardship to the village. Although inland and coastal hunting can be extensive during the late July and August, it is of the least important to the over-all welfare of Point Hope Eskimo inhabitants.

> Of all months in the year, March and April are in many ways the most critical for the residents of Point Hope. This is the period when inland hunting activity in the near Augotorux Creek, and coast-wise traffic over Augotorux Creek, can be and usually are at their annual maximum. In addition it is a season when extensive sea ice hunting takes place for distances of ten to hundreds of miles westward from Augotorux Creek.[24]

And summed up in yet another way we can see that a gradual adoption of a part of our culture is bringing changes into the life of the northern Native - not so much in their requirements for subsistence as in their means of obtaining it and their places of residence. Greater mobility meant that hunting and fishing camps could be abandoned, relocated or used less often, that they could live in large villages, near schools and hospitals and still be within reach of the resources they need to survive. Less time was needed to supply their needs. Instead of spending three days a week hunting caribou and the rest cutting willows and hauling them home for fuel with a dog team, the hunter would have time to supply others with these items, thus enabling them to secure full-time employment.

> The present-day diet is a blend of both traditional and modern foods. All Eskimo with sufficient capital are able to buy a wide variety of Western foods at local cooperative or trader's stores. In addition to basic items such as tea, sugar, flour, and canned milk, most families regularly purchase canned fruits, bread and crackers, candy, tobacco, and other easily available goods.
>
> The bulk of the food derives from traditional sources, however. Meat from the whale, seal, and caribou is stored regularly in ice cellars to be available when needed. Much of the meat is prepared by boiling, although large amounts of raw and dried meat also are consumed. Caribou is the preferred food; seal meat is the least desired and usually is reserved for the dogs.[25]

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[23] Spencer, *op. cit.*, and the subsistence village harvest reports of the U. S. Fish and Wildlife Service were also used.

[24] Don Charles Foote, *The Eskimo Hunter at Point Hope, Alaska*, Submitted to the United States Atomic Energy Commission in compliance with Contract No. AT (04-3)-315, June, 1960.

[25] Chance, *op. cit.*

Not only do Natives prefer traditional foods, they, along with most non-Natives, prefer their own winter clothing.

> In winter, traditional clothing appears and both men and women wear caribou and sealskin parkas. Sealskin pants or winter-insulated Western clothing are used for hunting trips or other outdoor activities.[26]

Finally, it must be remembered that the Arctic has not been developed to the point where it would support the number of people living there if they adopted the white man's way of life in its entirety. The Eskimo must look to the surface resources for a large part of their subsistence now -- just as their ancestors did -- and it is doubtful if this would change even with a mineral or oil bonanza close at hand and a resultant totally artificial economy.

The people have been quick to adopt those items of temperate zone culture that would enable them to live better. The harpoon, spear and bow were quickly replaced by firearms when they became available; the paddle was replaced in part by the outboard motor; the airplane and snow traveller are replacing the dog team for some uses. However, there are many items of food and clothing that were developed through the centuries by Arctic people that are far superior to those in use in warmer climates--these the Eskimo prefers and has wisely retained.

BERING STRAIT REGION

Ethnic Settlement Patterns

In addition to discussing the eskimo ethnography of this region, this section provides a place for the exposure of many misconceptions regarding the lack of Native political jurisdiction. The target of the following remarks and references within the Bering Strait region is the fancy that eskimo people had no political or territorial concepts, boundaries to property or hunting territories, leadership or law. Quite the contrary was actually true.

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[26] *Ibid.*

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Political organization has been traditionally interpreted in terms of a complex, and usually large, state or nation. Consequently, whenever a different or simplified form of government fails to fit the preconceived pattern of highly developed governmental machinery and concomitant trappings, it is either overlooked, or interpreted within another aspect of culture such as religion, kinship, or social organization. By disregarding such topics as leadership, law, or group solidarity as parts of political organization, where they properly belong, the Eskimos have been deprived of a fundamental part of their culture: the relationship of a group to a specific territory with its processes of control both within and beyond its boundaries. Political organization thus defined is applicable to any Eskimo group, no matter how simple or complex its government.

...

...A discussion of even the basic subject of tribal boundaries has been hopelessly crippled by the accepted notion that all Eskimos could wander wherever they wished because no group claimed land exclusively, and therefore could not have boundary lines. E. Adamson Hoebel, in a textbook about primitive law, peremptorily states that Eskimo land "is and ever remains no-man's land in an absolute and unconditional sense. . . . Anyone, whatever his local group, may hunt where he pleases, for the idea of restricting the pursuit of food is repugnant to all Eskimos, except to some extent in Western Alaska."

I have found this was not true in the Bering Strait region, and I doubt in other Eskimo areas. Every tribe of the Bering Strait was as aware of its boundaries as if fences had been erected.

Furthermore, there was no "unused land," and none of the so-called "vacuums" that have sometimes been thought to exist elsewhere in aboriginal North America. The issue of empty, unoccupied lands in the North has been repeatedly made by unobservant writers, who neglected to mention intensive seasonal fishing, caribou, bird, and small animal hunting, berrying, or egg and vegetable gathering activities, which at one time or another involved nearly every square mile of territory.

I have singled out several other statements by Hoebel, not only because they in no sense apply to the area under consideration, but because in their context they are understood to pertain to *all* Eskimo cultures. There are, however, many different Eskimo cultures, and one statement cannot stand for all. A brief statement after each quotation summarizes its irrelevancy for the Bering Strait area, and will be dealt with more fully below.

'The Eskimo is what some would call an anarchist. He has no government in the formal sense, either over a territory or at all.' This statement is too broad. The Bering Strait Eskimo did not live in anarchy; he lived in a well-ordered society in which a chief and often a council played an important role. The influence of their government extended over a definitely bounded territory within which the inhabitants were directed by a system of rules and laws.

'Magic and religion rather than law direct most of their actions.' Although it has also been inferred by other writers that religion was the only force that kept Eskimo behavior in line, an Eskimo's spiritual transgressions were in no way connected with intratribal or intertribal law and order, but with spheres over which man had no control -- the weather, the game supply, or illness -- and it was only within those that the shaman, or religious leader, performed. Transgressions against society were met with political judgment, and those against the spiritual, with religious judgment.

'Contacts between local groups are fleeting and temporary. No superstructure of social organization embracing several local groups has ever come into being.' In the Bering Strait area, contacts between local groups were frequent and long-lasting, and were formalized through tribal political alliances entered into for subsistence and defense purposes.

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Another common misconception about Eskimo political organization has been that the local group was a kinship group, pure and simple. Local groups or villages did not exist on the basis of kinship, but on the basis of common residence and citizenship conferred by physical association of the group with a certain area. Though a woman might be born in Wales, she became a Kauwerak citizen when she married a Kauwerak man and lived in Kauwerak, and kinship had nothing to do with it. Likewise, a man who was permitted to live permanently in a village or tribal territory other than his place of birth was considered to be a citizen of his adopted home. Temporary fishing or hunting camps have been composed entirely of kin, but the kinship composition was merely coincidental with the political unit. Relationships with the permanent home village, as well as with other temporary hunting camps, had to be explained in terms of locality and polity.

...

Eskimos of the Bering Strait area did not form one large tribe or political unit although for the most part they spoke mutually intelligible dialects. There was one generalized settlement pattern, but three subsistence patterns, which I have called the Whaling Pattern (whale, walrus, seal, and fish), Caribou Hunting Pattern (caribou, fish, seal, and beluga or the white whale), and Small Sea Mammal Pattern (seal, beluga, fish and caribou). Every subsistence pattern contained within it all of the region's available food products except whale, walrus, and occasionally beluga. Each larder also included many berries, water-fowl and game birds, squirrels, rabbits, eggs, and vegetable and root products. The principal tribe of the Whaling Pattern was Wales, and of the Caribou Hunting, Kauwerak. A typical example of Small Sea Mammal hunters was Shishmaref.

> The settlement pattern was a large village and several smaller ones located on a large river or coastal area within several hundred square miles of territory. The villages were periodically deserted for seasonal activities of fishing, berrying, trading, or caribou hunting, but Wales with its more than five hundred inhabitants was never completely empty. The political unit, which included these settlements within its specific territorial boundaries, was also coincidental with the tribe. The name of the principal village usually furnished the tribal name.[27]

Thus is seen Kinugumiut or Kingingmiut for Kingegan (present day Wales), the principal village of that region, or Noatagmiut for Noatak, the central place on the Noatak River.

In the political units -- settlements or groups of villages, whatever -- leadership was excercised and its historic pattern provides useful political understanding for today.

> The general form of government in the Bering Strait area was one in which the wishes of the people were carried out by one or more chiefs often working with a council of elders. The chieftainship was an office supposedly filled by the most capable man in the village, and though ideally it was hereditary, any man with the required qualifications could be groomed for its duties. Basic requirements were intelligence, wisdom, unselfishness, fairness, bravery, wealth (or the ability to acquire it), but above all, diplomacy and ability to arbitrate and get along with other tribes.
>
> Every Bering Strait village had one chief, who served as leader of the *kazgi* or community house, and if there were two *kasgis*, two chiefs. ...
>
> A man remained in the chieftainship throughout his lifetime, and though his physical strength might wane, his life-long experiences that had culminated in a wise old age were highly valued. A chief had the cooperation of his people; he was loved, respected, and followed. He was a diplomat and an intermediary who helped everyone, but who 'made trouble for nobody.'[28]

The shaman or medicine man, on the other hand, was often feared, disliked, and viewed with suspicion and was never a chief or political leader.

> At various times in the *kazgi* the chief would orate principles of conduct, which included reminders of the territorial limits to which a person could safely go, management of intratribal affairs, admonitions about stealing or committing murder, and such homely details as tips about survival on turbulent sea ice, in a storm, or about the best ways to hunt hard-to-get animals. The chief, in conjunction with the council, made rules and laws, saw that they were carried out, and arbitrated in both intratribal and intertribal affairs. The chief, however, usually made the final decision alone, and as Eskimo men often said, 'The Chief's word was law,' and the younger men rarely ran counter to his advice.
>
> The chief and the council held many meetings to decide on various courses of action -- for division of labor in cooperative ventures such as construction of a new community building or a caribou corral; positions to be assumed in case of threatened attack; procedure of dividing food during famine; duties to be undertaken at ceremonials; and punishment for crimes. The chief and the council also granted permission to other tribes for territorial use, and admonished their own tribal members about trespass into foreign territory.
>
> ...

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[27] Dorothy Jean Ray, "Land Tenure and Polity of the Bering Strait Eskimos," *Journal of the West*. Vol. VI, No. 3, July, 1967, p. 371.

[28] *Ibid.*

Each tribe expected chiefs of other tribes to give the same advice and information to their tribal members, and when Siberians or other Eskimos invaded or trespassed on land in the Bering Strait, the tribes assumed that they had ignored their chiefs. Despite persistent traditions of conflicts, the chief ideally tried to keep peace. Once when some eager young Shishmaref men 'wanted to get Siberia,' their chief told them in strong terms that they were not to cross the strait for fighting. However, the Eskimos were expected to defend their land to the death if Siberians came to Seward Peninsula. The village chief was usually the war chief, but if he did not wish to serve in that capacity, the council appointed another man.

In aboriginal times, the chief was the usual guide for strangers to foreign territory. He had learned the necessary procedures for dealing with different tribes through both experience and extensive instruction for his position. Among other things, he had learned what topics of conversation, personal or tribal, should be discussed or avoided in every territory, but above all, he had memorized all intertribal events and names of older persons needed to establish his identity and business. This knowledge was of the utmost importance, for without it he was unable to acquire essential rapport. Actually, however, he probably had become acquainted with various tribes by accompanying an older chief to the trading markets or to foreign territory.

The legendary *inyukutak* or 'hiding man' of western Alaska had a great deal of basis in fact, for *inyukutak* was usually a stranger who by some quirk of fortune had been blown away from home on broken ice or had got lost in a storm. He had to stay out of sight or be killed if he could not satisfactorily establish his identity and reason for being in the village. No man went alone as a stranger to foreign territory in pre-white days. However, once his contacts were made through his guide, he could then 'strike off on his own.'

> Early explorers likewise customarily engaged chiefs as guides, for not only had they established foreign contacts but were well acquainted with the country. Moreover, they also were in the best position through their political perogatives to provide large quantities of food needed by expeditions. ....
>
> ...
>
> Recognition of boundary lines between Eskimos and Indians has been made by most writers, but rarely between various Eskimo groups. W. H. Dall, in 1870, said that the Indians and Eskimos 'exhibit great jealousy in regard to their boundary lines. These lines are generally formed by the summit of the watershed between the small rivers which empty into the sea and those which fall into the Yukon.... Any man of either race found on the wrong side of the line is liable to be shot at sight, and deaths occur every season from this cause.'
>
> This statement was applicable also solely to Eskimo groups because their boundaries were equally precise and as jealously guarded. Eskimos of the Bering Strait area *could not* hunt wherever they pleased, but only in their own or their alliance's territory. During caribou hunting they did not move with the herds into neighboring land but stayed within their own sharply defined boundaries. Permission was needed to hunt or fish on foreign territory, even that of an alliance, but it was rarely asked of an enemy tribe. To be caught in territory of an unallied tribe could mean death, for men were often sent out specifically to chase off rumored trespassers.[29]

Just as there was an historical pattern of communal or tribal territoriality among the eskimo of the Bering Strait region, there was also identification with personal property claims and control including "water rights" in the modern sense.

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[29] *Ibid.*

> Small areas for fishing and sometimes for hunting were claimed by families within all tribal territory of the Bering Strait area. Claims were established at the mouth of almost every large tributary of large rivers, on various sections of productive streams like Tuksuk Channel, Agiapuk River, and Fish River, and in certain coastal areas. Some sites had been in the same families for many generations, and were usually patrilineally inherited. Once they were abandoned, they could be claimed by others. Clearly then, the holdings were strictly by usufruct.
>
> Permission was always asked to use any part of water or land belonging to the sites, which varied in size from only a few thousand square feet to the length of an entire creek. Women of the family gave permission to gather eggs, roots, greens, and berries, especially salmon-berries. The more plentiful cranberries and blueberries found on hillsides and hilltops were usually not included within a fishing site.
>
> ...
>
> Permission to fish was accompanied by payment of a certain percentage of fish caught. On the other hand, if a man or a woman asked to help with fishing (or possibly had been asked to help) he would also be paid with fish. At a one-mile-square fishing site at the mouth of North River near Unalakleet, the usual payment to a person for each drag of the seine was as many salmon that could be strung on a large willow branch (usually about five).
>
> On the Kotzebue Sound shore of Seward Peninsula the entire length of a few creeks near the coast was considered to be family areas for both fishing and hunting. Candle Creek (musito'ak, Eskimo potato), a tributary of the Kiwalik River, had 'belonged' exclusively to one family for generations for all subsistence pursuits. Other creeks were held under similar circumstances, and great jealousy was exhibited toward their use, not only for fishing, but for snaring birds, squirrels, and hunting caribou. ... [30]

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[30] *Ibid.*

In the present Native claims and protests it may be seen that Native ethnic groups and settlements or tribes have banded together to present their cases. There is in the present situation the strength of political alliance locally, regionally and on a statewide basis.

Political alliance of the Alaska Native also has precedent in the aboriginal Eskimo society of the Bering Strait region.

> Tribal alliances had been formed to extend political boundaries for greater flexibility in subsistence pursuits and for enlisting aid against common enemies. During the early nineteenth century primary alliances were in effect between Wales, Port Clarence, and Little Diomede Island; Wales, and the Tapkakmiut tribe of Shishmaref, Cape Espenberg, and Goodhope River; Kauwerak, Fish River, King Island, Port Clarence, and sometimes Nome; Nome, Fish River, King Island, and sometimes Kauwerak; Golovin, Shaktolik, and Unalakleet; St. Michael, Pastolik, and sometimes Unalakleet. A larger alliance between Wales and Kauwerak, the two most powerful nineteenth century mainland tribes particularly applied only to trade and exchange of the Messenger Feast, though families of each tribe used the other's resources. ...
>
> ...
>
> The alliances had no formalized intertribal councils, offices, or meetings, the chiefs and other leading men informally representing their tribes. Permission to use foreign territory was given by its chief through a standing agreement with the tribe, and not by a family, although visiting tribal members were guests of relatives while using another tribe's territory. Individual members could not use foreign territory if not sponsored by a relative. This reciprocity extended territorial usage in three ways: first, it enabled the islanders of Bering Strait to expand their resources by using the mainland; second, it served as a safety device against starvation in any one area; and third, it permitted mainland groups to obtain products difficult to get within their own boundaries.
>
> ...

Alliances for defense were also important in the Bering Strait area where villages were constantly preoccupied with impending conflicts. All tribes within an alliance were fighting partners, although those most vulnerable to attack felt greater responsibility toward each other. Hoebel's comment that 'Eskimos fight for grudges but not to acquire territory,' simply does not apply to Alaska, and needs reexamination on the basis of more groups than the few apparently utilized for his conclusions.

The Bering Strait Eskimos certainly fought because of grudges and the so-called 'blood feud,' which was really the sanctioned execution of a succession of murderers, but the greater part of fighting was over trespass or the invasion of land. This applied to both Eskimo and non-Eskimo groups. Eskimos felt greatest apprehension toward non-Eskimos, who were considered to be chronic and extremely dangerous interlopers. The enemy on the Eskimos' eastern territorial boundaries was Indian; on the coast north of Golovin Sound, Siberian (both Chukchi and Eskimo). Conflicts with Indians usually occurred on Eskimo-Indian boundary lines, and fighting between unallied Eskimo groups also took place near boundaries. Anxiety toward other Eskimo groups was not as pronounced as toward non-Eskimos, but disappearances and unexplained deaths of hunters and travelers were often blamed on other Eskimos because of trespass or deliberate invasion of territory. The abandonment of Kauwerak village during the nineteenth century has been attributed to territorial pressures, apparently from the north and the east, possibly by the Malemiut during their expansion.

Little Diomede Island and Wales were closely allied against Siberians, as were Port Clarence and Kauwerak. Kauwerak and Fish River were strong allies; an often-told 'true story' is that Kauwerak people once helped the Fish River people fight Indians who had invaded the easternmost tributary of their river. The various Unalit groups living around Norton Sound, according to tradition, also came to each other's aid more than once when attacked by the slowly-infiltrating Malemiut.[31]

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[31] *Ibid.*

For many reasons -- population pressures, need to adjust hunting and fishing grounds, trade expansion, famine and disease causes -- tribal readjustment of territories occurred and brief comment on this readjustment of recognized tribal boundaries will also aid in focusing upon the ethnic groups and settlement patterns shown in the succeeding tables for this region.

As shown, tribal boundaries and family rights were recognized, and in this region generally still are in varying degree. Additionally, each tribe wished to extend its boundaries and would do so if the land was not well guarded.

> According to one tradition, all of Seward Peninsula except a strip on its southern coast was once occupied by Wales and Kauwerak people. Wales territory extended roughly from the York Mountains as its southern boundary to Goodhope Bay as its northern one, and Kauwerak territory comprised all of the rest of the peninsula to the adjoining Indian territory on the east and to the coastal stip on the south. This strip, it is agreed by all, was occupied by Unalit before and during the nineteenth century, but at what time they moved from the south, the direction from which everyone supposes them to have come, may never be determined. During the nineteenth century they lived as far west as Golovin Bay where both the Kauwerak and Unaluk dialects were spoken. For earlier times, one tradition places them as far west as Bluff, and still another, at Cape Nome. However, by the end of the nineteenth century, the Kauwerak dialect was spoken everywhere in the southern half of the peninsula except in the area around Golovin Bay, and in the area to the east of it where the Malemiut had settled during the middle part of the nineteenth century.[32]

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[32] *Ibid.*

One of the most important adjustments of ethnic groups was that which followed the Malemiut movement southward beginning during the last decade of the eighteenth century. The movement, initiated long before the caribou disappeared from northwest Alaska, was a result of Kotzebue Sound and Port Clarence Chukchi-Eskimo trade in furs, which were destined for the Anyui Trade Fair on the Kolyma River in Siberia. The first Malemiut traders went to the Yukon, but subsequent ones branched out to southern Seward Peninsula and eastern Norton Sound into Unalit territory after kinship ties had been established and the caribou had disappeared (Ray n.d.).

The Malemiut infiltration into Unalit territory was accomplished first by roving groups who returned yearly or bi-yearly to Kotzebue Sound. Even at its height it was not a solid taking over of territory, but occupation of abandoned sites, or settlement among the Unalit. ... [33]

The Western Union Telegraph Expedition found that the Malemiut as well as some Kauwerak people had established seasonal camps at Unalakleet between 1865 and 1867, and it probably was at this time that the Malemiut began their coexistence with the Unalit. The 1880 census reported that the southernmost permanent settlement of Malemiut was Shaktolik, and that they had a few winter houses at Unalakleet 'within the boundaries of another tribe.' The 1890 census (from information collected about 1883) said that Egavik (between Shaktolik and Unalakleet) was both Malemiut and Unalit. By the late nineteenth century, Unalakleet was composed of peoples speaking two separate languages represented by three dialects -- Inupiaq and two of its dialects. Malemiut and Kauwerak, and Yupik with its Unaluk dialect.

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[33] Dorothy Jean Ray, "Nineteenth Century Settlement and Subsistence Patterns in Bering Strait." Reprinted from *Arctic Anthropology*, Vol. II, No. 2, 1964.

This slow penetration was doubtless facilitated by the smallpox epidemic of 1838, which was apparently confined to Unalit settlements. Koyuk (Zagoskin's Kvinhak) at the mouth of the river of the same name, was hard hit; Unalakleet is said to have had only thirteen survivors, and the small villages of 'Michat, Chiupliugpak, Kuakali, and Kabychluik' near Kikigtaruk between St. Michael and Unalakleet were abandoned.

North of Kauwerak territory a similar juxtaposition of peoples took place according to tradition, but recorded data are even more scarce than for the early Malemiut-Unalit relationships. To the Eskimos themselves, the northern coast of Seward Peninsula held the fewest attractions for living. This is reflected in the area's relatively small population and in the commonly held beliefs that people from that area were constantly agitating to push south into the rich Kauwerak country. The principal tradition says that the entire north slope, except for the Buckland River system, was inhabited before the eighteenth century by speakers of the Bering Strait dialect. By mid-nineteenth century 'Malemiut' speakers (the name by which all Kotzebue Sound dialects are now known) had come from the east to settle west of Deering.[34]

A second reason for population readjustment during the nineteenth century was the disappearance of the caribou. This disappearance, however, was not a cause for the caribou hunters' invasion of another tribe's territory. The Malemiut and Igloo Eskimos of the Caribou Hunting Pattern continued to live in the same general area after the caribou left. They moved to alternative villages, both coastal and inland, of their original territory, and pursued alternatives already existing in their pattern. This also applied to the transplanted Malemiut in eastern Norton Sound in the 1860's.[35]

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[34] Ray, "Land Tenure ...," *op. cit.*, p. 371.
[35] Ray, "Nineteenth Century...," *op. cit.*

5

Recent changes in family and community occupancy of the Bering Strait Eskimos have followed earlier patterns. Shifts during the twentieth century were partly the consequence of events over which the Eskimo had little or no control but they managed nevertheless to join communities within the tribal, or at least, alliance, territory. The new town of Nome was the only exception but it was atypical in being composed of Eskimos from many distinct tribes. Even so, Nome embraced very few persons from beyond the Bering Strait area.

A few of the more representative examples may be noted: Islanders from Little Diomede characteristically moved to Wales or to Teller; people from the Kauwerak area moved to Teller, as did the King Islanders; dwellers on the Kobuk and the Noatak have maintained their old villages but visit Kotzebue for summer fun and fishing.

Nome is an uneven composite of people of Diomede, Kauwerak, Golovin, King Island, and Nome origin, plus some others. Many Diomeders were drawn to the Nome area to market their ivory carvings. A scattering of Kauwerak was attracted by the cosmopolitan character of the town -- its schools and employment -- but some subsequently moved to Teller. The greatest influx was of King Islanders. Until recently they came only for the summer. Like the Diomeders they were interested in a ready market for their ivory carvings, and a limited summer residence sufficed. However, in 1966, they moved permanently to the Nome area.

It will be noted that a distinction has been made between the town of Nome, as such, and the general Nome area. The town came into being through settlement by individuals and families, not through community or tribal relocation. During the many years (after the gold rush) that King Islanders went as a group to the mainland for the summer, they maintained their own settlement, 'King Island Village' east of Nome, and physically separated by a mile of open land. Now that they apparently intend to remain it appears that this isolation is to be maintained. Likewise, the Diomede Islanders originally set up their own

> summer village, to the west of Nome, but later occupied a tract adjoining the settlement of King Island Village, but sharply separated from it. Not only has the principle of tribal integrity and territorial separation been preserved, but the political mechanisms of control, including leadership and traditional rules of behavior are specific and distinct for each of these groups. Both recognize today the overall superior political power of the United States, but this has not erased their concepts of separate political organization as tribes nor the patterns that characterize the alliances.[36]

The settlement pattern of the Eskimo of this region from Kivalina and Noatak, north of Kotzebue Sound, throughout the Seward Peninsula south through Norton Sound followed a similar pattern despite ethnic differences and some subsistence pattern divergencies.

For the most part, like the settlements of the Arctic Slope region, the settlement pattern was that of the central based community with seasonal movements -- a pattern which in recent years, as a result of centralized growth of the better serviced communities, has become even more greatly accentuated than it was in the nineteenth century. And here again, as in many facets of Eskimo life, degree or means have changed but not basic behavior patterns based upon environmental requirements.

> Almost all of the villages were inhabited in the winter, and occasionally in the summer. Winter villages and summer fishing camps were located inland as well as on the coast. However, a fishing camp, unless doubling as a winter village, was not considered a permanent home. In the Bering Strait area, great importance was attached to a home village, and no matter what moves the inhabitants made during the year, one village was considered to be their 'permanent' village. ... a village with a kazgi. On both the coast and inland, the home village was the winter village, although the inland caribou hunters spent a relatively shorter time in their home village than those on the coast.
>
> The terms 'inland' and 'coastal' here mainly refer to winter activities of the individual villages; it does not indicate that the inland inhabitants remained only in the interior, or coastal inhabitants only on the coast. Inland dwellers went annually to the bays of

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[36] *Ibid.*

FIGURE III - 29

HISTORIC NATIVE PLACES AND CURRENT STATUS

BERING STRAIT REGION

NATIVE GROUP	HISTORIC PLACES	EXISTING SETTLEMENT POPULATIONS 25 - 299	300 - 999	1000 +	STATUS UNKNOWN	SEASONAL CAMPSITE	ABANDONED	ANTIQUITY SITE
Kevalingamiut[a]	On the coast of the Arctic Ocean, Chukchi Sea from Cape Seppings and Cape Krusenstern inland to Noatak River. Their settlements in this region were:							
	Kivualinak; present-day Kivalina	X						
	Ulezara, near Cape Krusenstern (former village; reported 1890).					X		
Noatagmiut	On the lower course of the Noatak River; their settlements were:							
	Aniyak, on the Arctic coast north of Kotzebue Sound. (Former village; population in 1880 - 25).					X		
	Noatak, on the lower course of the Noatak River. Population in 1880 - 60. Site of present-day Noatak.	X						
	Nauyoaruk, campsite on lower Noatak.					X		
	Tikizat, at north end of Krusenstern Lagoon, Chukchi Sea Coast. Population in 1880 - 75.					X		
Nunatagmiut[b]	Located on the upper reaches of the Noatak; their settlements were:							
	Aneyuk (or Aniuk). Reported in 1886. Location unknown.				X			
	Issheyuk (15 huts reported in 1885). Location unknown.				X			
	Myoggagallok. Reported in 1886. Location unknown.				X			
	Nimyuk (hunting camp). Reported in 1886. Location unknown.				X			
Kowagmiut	On the Kobuk River east of Kotzebue Sound. Their settlements were:							
	Kikiktak, at the mouth of Hotham Inlet, Kotzebue Sound. Site of present-day Kotzebue.			X				
	Umnokalukta, on Black River, a branch of the Kobuk River. (Former village reported in 1885).					X		X
	Unatak, on the Kobuk River at the mouth of the Ambler River. Present Ambler.	X						X
	Sheshalek, on the north shore of Kotzebue Sound, near the mouth of the Noatak River. The summer settlement of the river people.					X		
	Kiana, on the right bank of the Kobuk River. Became permanent about 1909.	X						
	Kobuk (or Kowak) on the Kobuk River, 7 miles above Shungnak. Formerly Old Shungnak; renamed in 1928. Present-day Kobuk.	X						
	Shungnak, relocated families from old site first called Kochuk then Shungnak.	X						
	Noorvik (or Oksik). Population in 1920 - 280.		X					
Selawigmiut	On Selawik Lake[c] east of Kotzebue Sound. Their settlements were:							
	Selawik (first referenced in 1842). Population in 1880 - 100.		X					
	Gabolio camp.					X		
Malemiut	On the coast of Norton Sound north of Shaktolik, and on the neck of the Seward Peninsula. Their settlements were:							
	Attenmiut, near the source of the Buckland River. A Nineteenth Century inland village. Location unknown.						X	
	Singik, an ancient site and Nineteenth Century campground on Elephant Point, Kotzebue Sound.							X
	Chamisso, on Chamisso Island in Eschscholtz Bay.					X		
	Inyuktuk, on Igloo Point, Kotzebue Sound. Reindeer corral and cabin here.					X		
	Inglutaligemiut, on Inglutalik River.						X	

NATIVE GROUP

Malemiut (Contd)

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[a] Occupied Arctic Si

[b] From map of Ensign

[c] There are many sea

NATIVE GROUP	HISTORIC PLACES	EXISTING SETTLEMENT POPULATIONS 25 - 299	300 - 999	1000 +	STATUS UNKNOWN	SEASONAL CAMP SITE	ABANDONED	ANTIQUITY SITE
Malemiut (Contd)	Makkukruk or Kongik. Largest downstream village on the Buckland River. Population in 1880 - 90. Near site of present-day Buckland.	X						
	Koyuktolik on the Koyuk River (var. Kviguk). Present-day Koyuk.	X						
	Ogowinagak (var. Kvinkak or Issac's village), on Kvinkak River at the upper end of Norton Sound.					X		
	Kwik, two villages on each side of and at the mouth of the Kwik River.					X (left bank)		X (right bank)
	Nubviakchugaluk, on the north coast of Norton Sound. Population in 1880 - 30.							X
	Nuklit (Nukleet), on Cape Denbigh, Norton Sound, 1849.							X
	Kayuk village on upper Buckland River. Site of a proposed place of the 1920's to move Buckland.						X	
	Kilulik, village on upper Buckland River.						X	
	Iethe' took, village on upper Buckland River.						X	
	Kuluvachak, village on upper Buckland River.						X	
	Shaktolik, on the east coast of Norton Sound; reported in 1842. Population in 1880 - 60.	X						
	Tukutat, at mouth of Espenberg River.	(Fred Goodhope's reindeer headquarters)						
	Taapkuk, at Cape Espenberg, Kotzebue Sound. Summer camp for Tukutat.	(Barr family campgrounds)				X		
	Nugnugaluktuk, seasonal fishing and sealing site; Cape Espenberg area, Kotzebue Sound.					X		
	Ungmalaukpuk, seasonal fishing and sealing site; Cape Espenberg area, Kotzebue Sound.					X		
	Tugmagluk, seasonal fishing and sealing site; Cape Espenberg area, Kotzebue Sound.					X		
	Likliknuktuk, seasonal fishing and sealing site; Cape Espenberg area, Kotzebue Sound.					X		
	Pittak, at mouth of Goodhope River, Kotzebue Sound.	(Alfred Karmun's reindeer corral and cabins near here).				X		
	Pittakpuk, on upper Goodhope River, Kotzebue Sound. Location unknown.						X	
	Mitliktoghvik, confluence of Placer Creek and Goodhope River. Location unknown.						X	
	Mitlakmut, on west shore of Imuruk Lake.							X
	Uyauks, small village at mouth of Clifford Creek, Kotzebue Sound.					X		
	Siknaugrurak, at mouth of Rex Creek, Kotzebue Sound.					X		
	Toalavik, at mouth of Sullivan Creek, Kotzebue Sound.					X		
	Kipalut, Cape Deceit near present-day Deering.						X	
	Innachukmiut, an ancient village behind present-day Deering.							X
	Kugruk, old settlement located on right bank of Kugruk Lagoon. Referenced in 1826.							X
	Muzhitoak[a], at mouth of Candle Creek. (Near present-day Candle).[b]	X[b]					X[a]	
	Kikkiktuak, near recent place of Kiwalik Spafarief Bay, Kotzebue Sound. Kiwalik present place.	less						
	Ulukuk, on Unalakleet River east of Norton Sound (var. Alakuk). Reported in 1842.				X			
	Ungalik, at the mouth of Ungalik River at the eastern end of Norton Sound (var. Oonakhtolik). First reported in 1842; population in 1880 - 50.					X		
	Irathluik (or Fish River).					X		
	Iwanivit, camp on Koyuk River.					X		

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[a] Occupied Arctic Slope Region also.
[b] From map of Ensign W. L. Howard, U.S.N., 1886, on Stoney Naval Expedition, 1886; also referenced in Dictionary of Alaska Place Names.
[c] There are many seasonal camps around Selawik Lake and this has always been so.

NATIVE GROUP	HISTORIC PLACES	EXISTING SETTLEMENT POPULATIONS			STATUS UNKNOWN	SEASONAL CAMP SITE	ABANDONED	ANTIQUITY SITE
		25 - 299	300 - 999	1000 +				
Maleniut (Contd)	Uksakuknuk, camp 3/4 mile above Dime Landing.					X		
	Kwinghak (near present site of Moses Point).	less						
	Muviakchak. Near present-day Elim. Population in 1880 - 30.	X						
	Miliantulik; small settlement on Iron Creek.					X		
	Kwighuk; summer fish and berrying camp.				X			
Inguklimiut	On Little Diomede Island in Bering Strait.							
	Inalik	X						
Kauwerak and Related tribes	On the southern part of the Seward Peninsula westward from Norton Bay, many wintering on the eastern shore of Norton Sound.							
	Agolak, camp at mouth of Lost River.					X		
	Ahvenuk, inland village on Kuzitrin River. Present site of numerous fish camp cabins.					X		
	Akavingayak, on bluff near Fox Creek at Port Clarence.					X		
	Amilrak, half way on spit of Point Spencer.					X		
	Anachauik, camp at mouth of Ophir Creek.					X		
	Angutak, site of present-day Solomon.	less						
	Ayak, located on Sledge (Ayak) Island. Population in 1880 - 50. Not true Kauwerak but Ayakmiut.					X		
	Ayasayuk, near Cape Nome, permanent village.					X		
	Casadepaga, fish camp.					X		
	Chauiapak, small settlement on Fish River.					X		
	Eghukachak, near present-day Bluff.				X			
	Ikpighilauk, small village southwest of Sinramiut.					X		
	Ikpiumizua, small village southeast of Sinramiut.					X		
	Ikpiung, at mouth of Fox Creek, Port Clarence.					X		
	Imoktegokshuk, Mupterukshuk and Musok. Villages in Safety Lagoon area in 19th century. Now all under general name of Muk, present-day fish camp region. Population in 1890 - 30.					X		
	Kachegaret, at Port Clarence. Location unknown.						X	
	Kaga, at end of Point Spencer. Port Clarence area. (Possibly permanent places).					X		
	Kailioshuak, at mouth of Cripple Creek.					X		
	Kalulik, at Cape Douglas.					X		
	Kanauguk, at mouth of Kanauguk River. Joint use place with Kinugumiut people.							
	Kangarak, old settlement at Immuruk Basin.					X		
	Kasilinuk, small settlement at mouth of Tuksuk Channel.					X		
	Kauwerak[a], inland village on Kuzitrin River (Reported in 1854-55). At or near Mary's Igloo.[b]	less[b]					X[a]	
	Keluniak, seasonal camp in 1884. At or near Council.					X		
	Kungskuik, at mouth of Quartz Creek.					X		
	Kuzruk, at mouth of Tisuk River between Capes Woolley and Douglas. Area of numerous camps.					X		
	Mizek, on Point Jackson.					X		
	Nagoluk, small village 5 miles west of Nome.					X		
	Mutsvik, present-day White Mountain.	X						
	Opiktulik (or Okpiktolik) on the north shore of Norton Sound near Topkok Head. Population in 1880 - 12.					X		
	Pingo, at mouth of Igloo Creek.					X		
	Salinuk or Nuk, at Port Clarence. Present-day Teller.	X						

NATIVE GROUP	HISTORIC PLACES	EXISTING SETTLEMENT POPULATIONS			STATUS UNKNOWN	SEASONAL CAMP SITE	ABANDONED	ANTIQUITY SITE
		25 - 299	300 - 999	1000 +				
Kauwerak and Related tribes (Contd)	Setuk, near Cape Nome; permanent village.					X		
	Singaurak, two camps on each bank of the channel to Immuruk Basin.					X		
	Singiyak, at Cape Wooley. Six-house village wiped out by flu in 1918. Present place where King Island people wish to resettle.					X		
	Singyuk, small village - old site. Location unknown.				X			
	Sinramiut or Sinauk on the north shore of Port Clarence near Brev[illegible] Mission and Teller Reindeer Station. Population in 1880 - 36.	X						
	Sinuk (var. Singuk), on the mainland opposite Sledge Island at mouth of Sinuk River.					X		
	Sitnasuak, at mouth of Snake River. Population in 1880 - 20. Port of present-day Nome			X				
	Sitnasuakak, at mouth of Pe[illegible]y River opposite Sledge Island. Population in 1880 - 20.					X		
	Sungiyorat, inland village on Kuzitrin River.					X		
	Taksunuk, near Sinramiut.					X		
	Tapkak or Topkok on north shore of Norton Sound at Topkok Head. Population in 1880 - 50.					X		
	Uinuk or Uinakhtaguik at Ft. Davis, mouth of Nome River. Population in 1880 - 10. Adjacent to present-day Nome. Present place.	X				X		
	Ukuivuk, located on King (Ukuivuk) Island. Population in 1890 - 200. King Islanders are not true Kauwerak but Ukuivukmiut.					X		
	Akulesak Alianok Asagrok Ipnuk Itak Kazgun Kingnugat Musu Titkaok } Seasonal camps along Tuksuk Channel to Immuruk Basin					X		
	Alakasuk Asuk Atnuk Inuingnuk Katinyak Kektoaschliuk Kingmimsewa Kogrukpak Soiyak } Inland villages on the Kuzitrin River					X		
Unaligmiut	Extending from the eastern shore of Norton Sound inland to the coast range. Their settlements were:							
	Anemuk, on Anvik River 30 miles above junction with the Yukon. Reported in 1869.				X			
	Atnuk, near Darby Cape. Large village in 1851 disseminated by disease. Population in 1880 - 20.					X		
	Atowak, near Cape Stephens, northwest coast of St. Michael Island. Reported by Zagoshin in 1842. Present place of Stebbins.	X						
	Chinik, on Golovin Bay. Present-day Golovin.	X						
	Chungauroktulik, on Golovin Bay.						X	
	Egavik or Iguik, on Norton Sound at mouth of Egavik River. Reported in 1867.	less						
	Iknetuk, largest village on Golovin Bay.					X		
	Ipnuchauk (may be Chaimut or Chaik), on the north shore of Norton Sound near Golovin Bay. (Former settlement in 1850).					X		
	Kiktaguk, on the southern coast of Norton Sound, 17 miles east of St. Michael. First reported in 1866; reindeer camp in 1905.					X		
	Nuwayak, on Norton Sound 4 1/2 miles southwest of Tolstoi Pt. Tebenkov, 1852 - present fish camp.					X		
	Pikmiktalik, near the mouth of the Pikmiktalik River, just north of Cape Romanzof. Reported in 1842.					X		
	Popikiuk, on Golovin Bay.						X	
	Tachek, on St. Michael Island, near the Russian redoubt, and now included in the town of St. Michael.	X						

NATIVE GROUP	HISTORIC PLACES	EXISTING SETTLEMENT POPULATIONS 25 - 299	300 - 999	1000 +	STATUS UNKNOWN	SEASONAL CAMP SITE	ABANDONED	ANTIQUITY SITE
Unaligmiut (Contd)	Topanika, on the eastern coast of Norton Sound, 22 miles southeast of Cape Denbigh. First reported in 1847; population in 1880 - 10.				X			
	Tubuktolik, on the north shore of Norton Sound. Reported in 1842 as a very large village.							
	Unalaklik, mouth of Unslaklik (Unalakleet) River. Present day Unalakleet.		X					
	Ichet Kangekachakpuk Kotikutuk Kukuktaoluk Mutikut Tivithluk } Berrying, sealing, and fishing camps between Elim and Atnuk.					X		
	Chimuklik Chingikchauk Kailivik Kikchauik Kingukpak Kukok Kulumuvik Kwichak Malimiuk Nigluchauik Nunanuhak Wiaalik } Berrying and fishing camps on Golovin Bay and Lagoun					X		
Kingiamiut	On the Seward Peninsula in the region about Cape Prince of Wales. Their settlements were:							
	Aghudlawak, north of Singauruk on ocean.					X		
	Anaktkowatuk, at present site of York.					X		X
	Kanauguk, at mouth of Kanagruk River. Joint use place with Kauwerak people.					X		
	Kingegan, present-day Wales. Formerly two villages: Agianamiut (south village) and Kiatanamiut (north village). Citation of Eidanno believed wrong by Ray.	X						
	Mitletak, located at end of Lopp Lagoon.					X		
	Pelazuk or Pelazrza. Three and a half miles southeast of Tin City.					X		
	Pingazurak, north of Wales.					X		
	Tapkarak, between Wales and Palazrak, near present-day Tin City.						X	
	Umevyuk, ancient village site; reindeer camp in 1890's.					X		X
	Mitletavik Singaurak } Neighboring villages on spit of land of Lopp Lagoon.					X X		X
Tapkakmiut	A number of small villages regarded as permanent located between Mitletak and Shishmaref:							
	Akoliksat, permanent oogruk camp.					X		
	Akunik, permanent Oogruk camp.					X		
	Ennaghruk, permanent oogruk camp.					X		
	Ipnorak, at mouth of Serpentine River.					X		
	Iyet, Serpentine Hot Springs.					X		
	Kividluk; reported seven houses in 1892.					X		
	Lungyat, fishing village northeast side of Shishmaref Inlet.					X		
	Nonatak, southwest side of Shishmaref Inlet.					X		
	Shishmaref (var. Kiktuktuk) at Shishmaref Cape.	X						
	Silhuk, a very old, small year around place; permanent oogruk camp.					X		
	Ikpik Imiengnak Issak Itibluk Owevuk Sinyasat } First reported in 1892; always occupied in seal hunting time.					X		

Sources: Giddin

Hodge,
190

Orth,
Pri

Oswalt

Ray, D

Ray, U
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Swanto
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Compil

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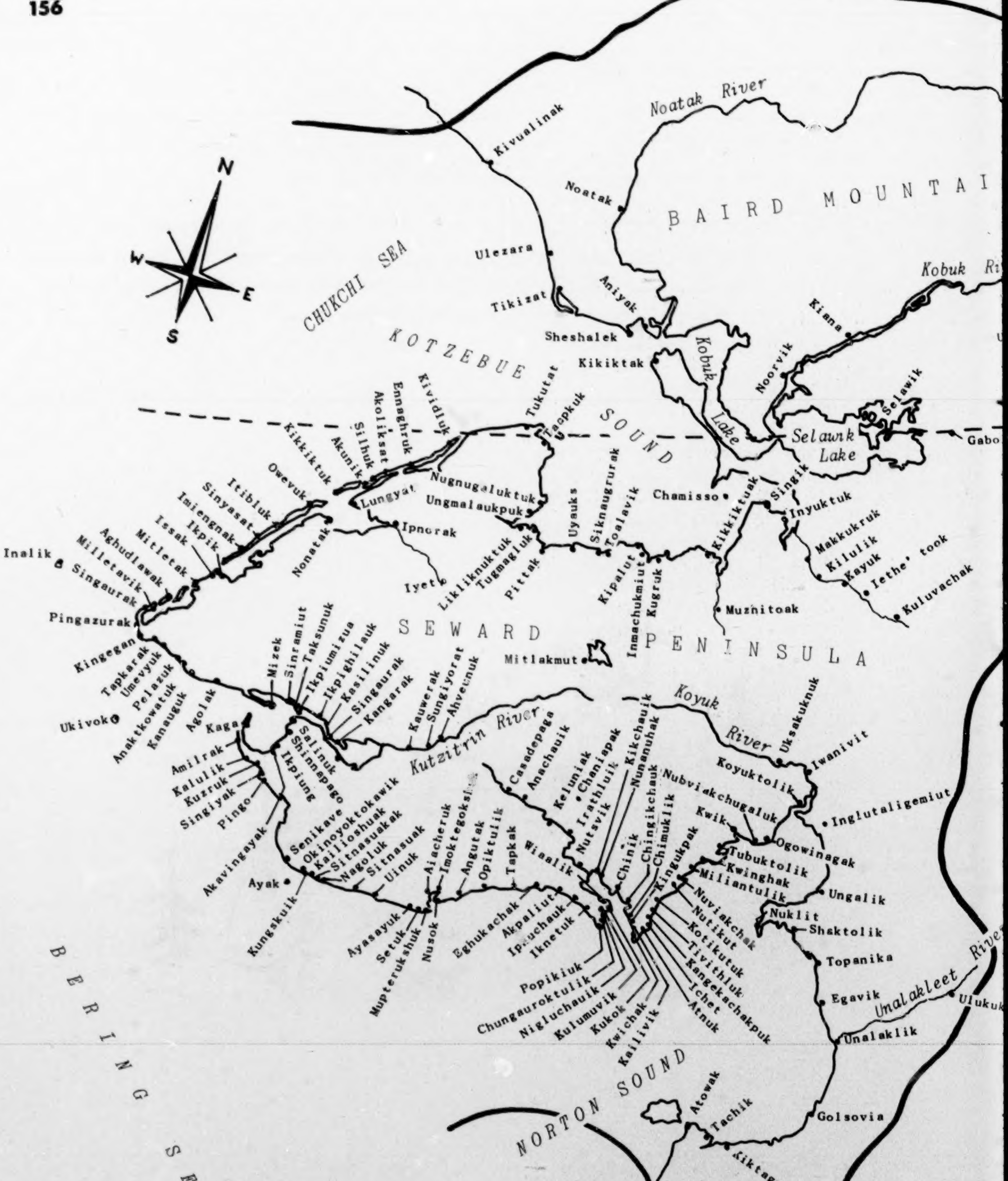
Compilation by David M. Hickok, Federal Field Committee for Development Planning in Alaska.


N
W
E
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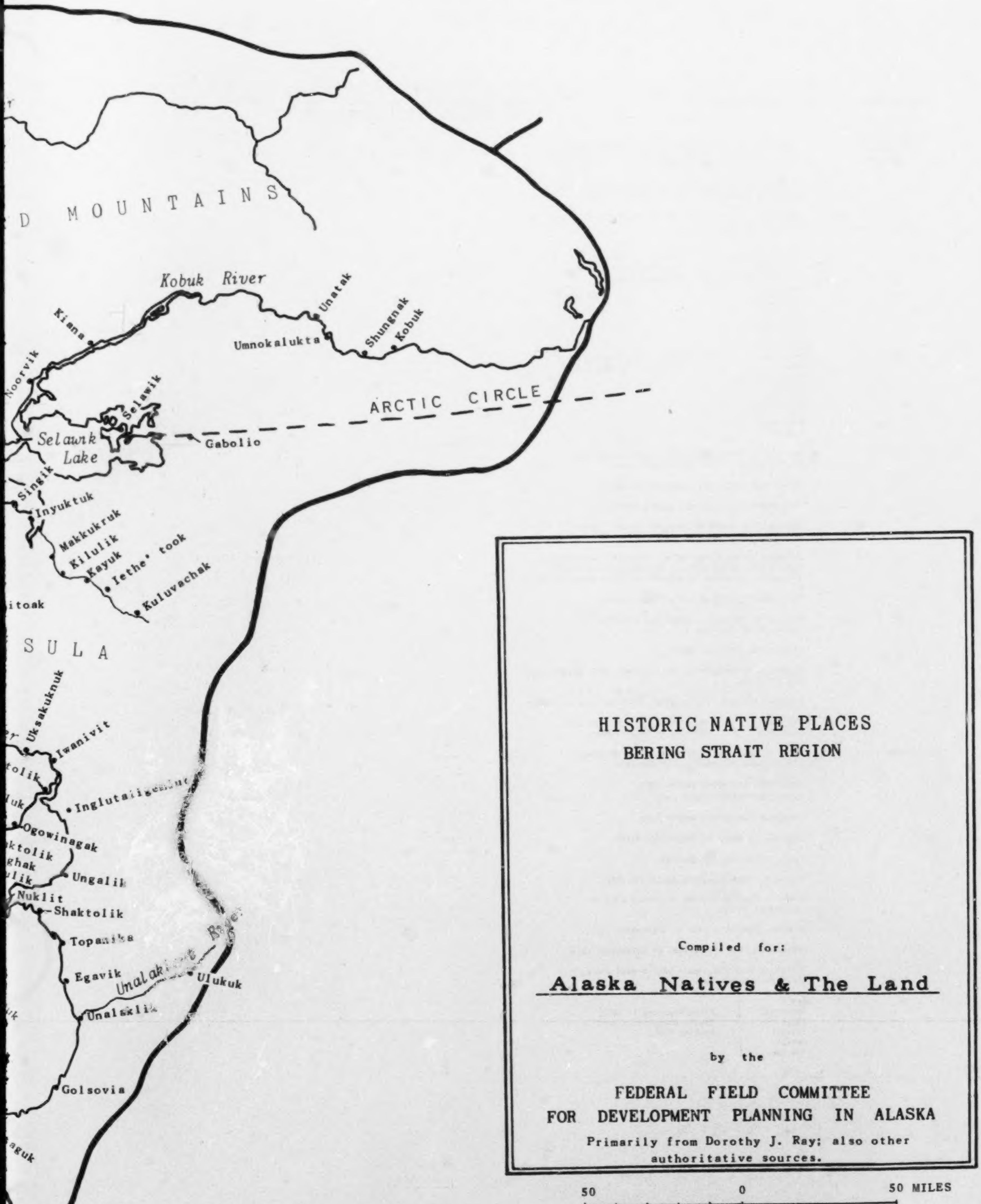
CHUKCHI SEA
KOTZEBUE SOUND
BERING SEA
NORTON SOUND
SEWARD PENINSULA
BAIRD MOUNTAI
Noatak River
Kobuk Ri
Kobuk Lake
Selawik Lake
Koyuk River
Kutzitrin River
Unalakleet Rive
Kivualinak
Noatak
Ulezara
Tikizat
Aniyak
Sheshalek
Kikiktak
Kiana
Noorvik
Selawik
Gabo
Chamisso
Singik
Inyuktuk
Makkukruk
Kilulik
Kayuk
Iethe' took
Kuluvachak
Muznitoak
Kikkiktuak
Tukutat
Taopkuk
Kividluk
Ennaghruk
Akoliksat
Silhuk
Akunik
Kikkiktuk
Owevuk
Itibluk
Sinyasat
Imiengnak
Issak
Ikpik
Mitletak
Aghudlawak
Milletavik
Singaurak
Inalik
Pingazurak
Lungyat
Nugnugaluktuk
Ungmalaukpuk
Ipnorak
Nonatak
Iyet
Likliknuktuk
Tugmagluk
Pittak
Uyauks
Siknaugrurak
Toalavik
Kipalut
Inmachukmiut
Kugruk
Mitlakmut
Kingegan
Tapkarak
Umevyuk
Pelazuk
Anaktkowatuk
Kanauguk
Agolak
Ukivok
Kaga
Mizek
Sinramiut
Taksunuk
Ikpiumizua
Ikpighilauk
Kasilinuk
Singaurak
Kangarak
Kauwerak
Sungiyorat
Ahveunuk
Salinuk
Shinnapago
Ikpiung
Amilrak
Kalulik
Kuzruk
Singiyak
Pingo
Akavingayak
Ayak
Kungskuik
Senikave
Okinoyoktokawik
Kallioshuak
Sitnasuakak
Nagoluk
Sitnasuak
Uinuk
Ayasayuk
Setuk
Mupterukshuk
Nusok
Aiacheruk
Imoktegokshuk
Angutak
Opiktulik
Tapkak
Eghukachak
Wiaalik
Akpaliut
Ipnuchauk
Iknetuk
Casadepaga
Anachauik
Keluniak
Chaniapak
Irathluik
Nutsvik
Kikchauik
Nunanuhak
Chingikchauk
Chimuklik
Chinik
Kingukpak
Popikiuk
Chungauroktulik
Nigluchauik
Kulumuvik
Kukok
Kwichak
Kallivik
Atnuk
Ichet
Kangekachakpuk
Tivithluk
Kotikutuk
Nutikut
Nuviakchak
Miliantulik
Kwinghak
Tubuktolik
Kwik
Nubviakchugaluk
Ogowinagak
Koyuktolik
Uksakuknuk
Iwanivit
Inglutaligemiut
Ungalik
Nuklit
Shaktolik
Topanika
Egavik
Ulukuk
Unalaklik
Golsovia
Atowak
Tachik
Kiktaguk
Pikmiktalik

FIG. III - 30



D MOUNTAINS
Kobuk River
Unatak
Kiana
Umnokalukta
Shungnak
Kobuk
Noorvik
Selawik
ARCTIC CIRCLE
Selawik Lake
Gabolio
Singik
Inyuktuk
Makkukruk
Kilulik
Kayuk
Iethe' took
Kuluvachak
itoak
SULA
Uksakuknuk
Iwanivit
tolik
Inglutaligemiut
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Topanika
Egavik
Unalakleet River
Ulukuk
Unalaklik
Golsovia
aguk
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50 MILES

HISTORIC NATIVE PLACES
BERING STRAIT REGION

Compiled for:

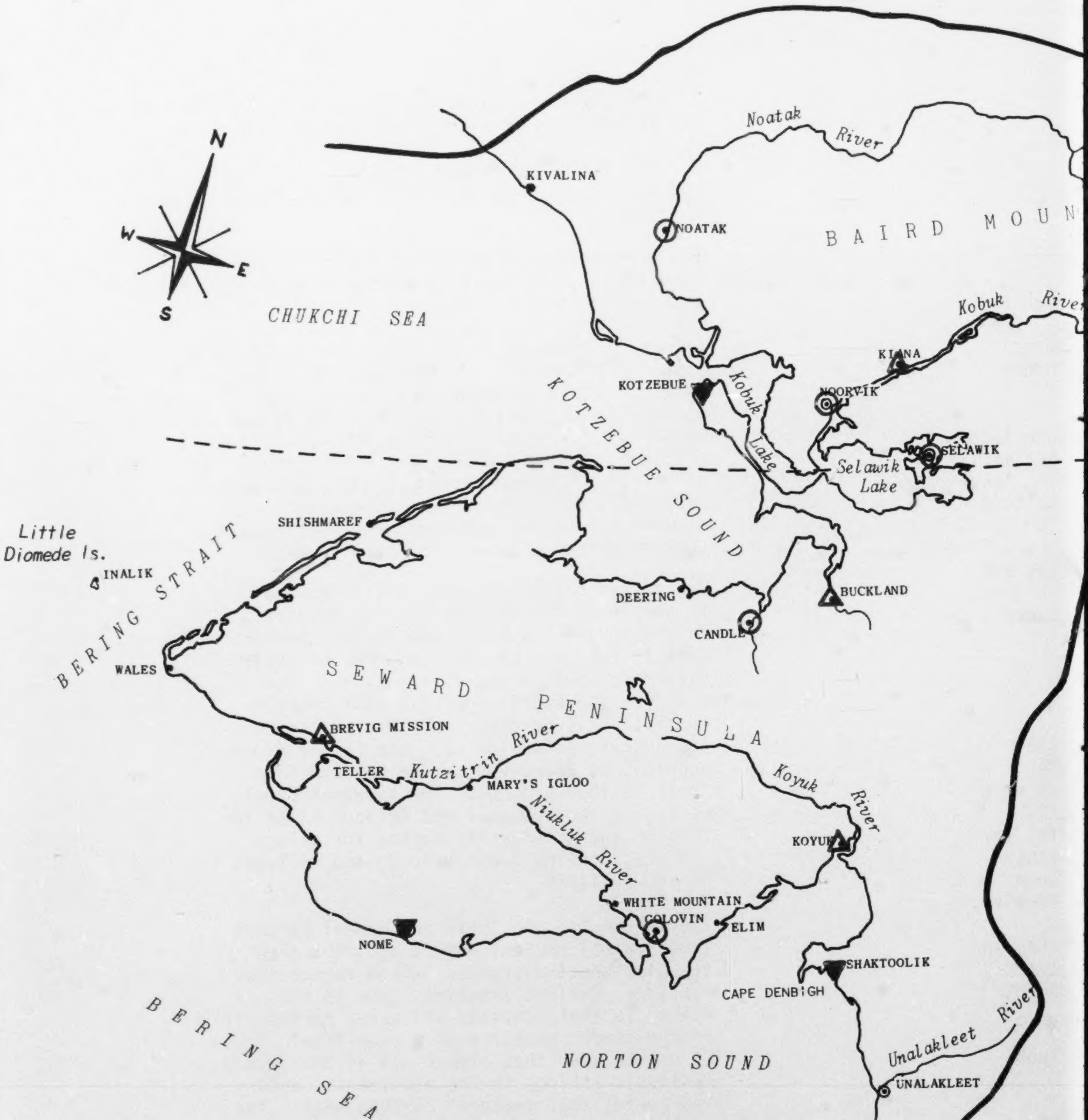
Alaska Natives & The Land

by the

FEDERAL FIELD COMMITTEE
FOR DEVELOPMENT PLANNING IN ALASKA

Primarily from Dorothy J. Ray; also other authoritative sources.

FIG. III - 30


N
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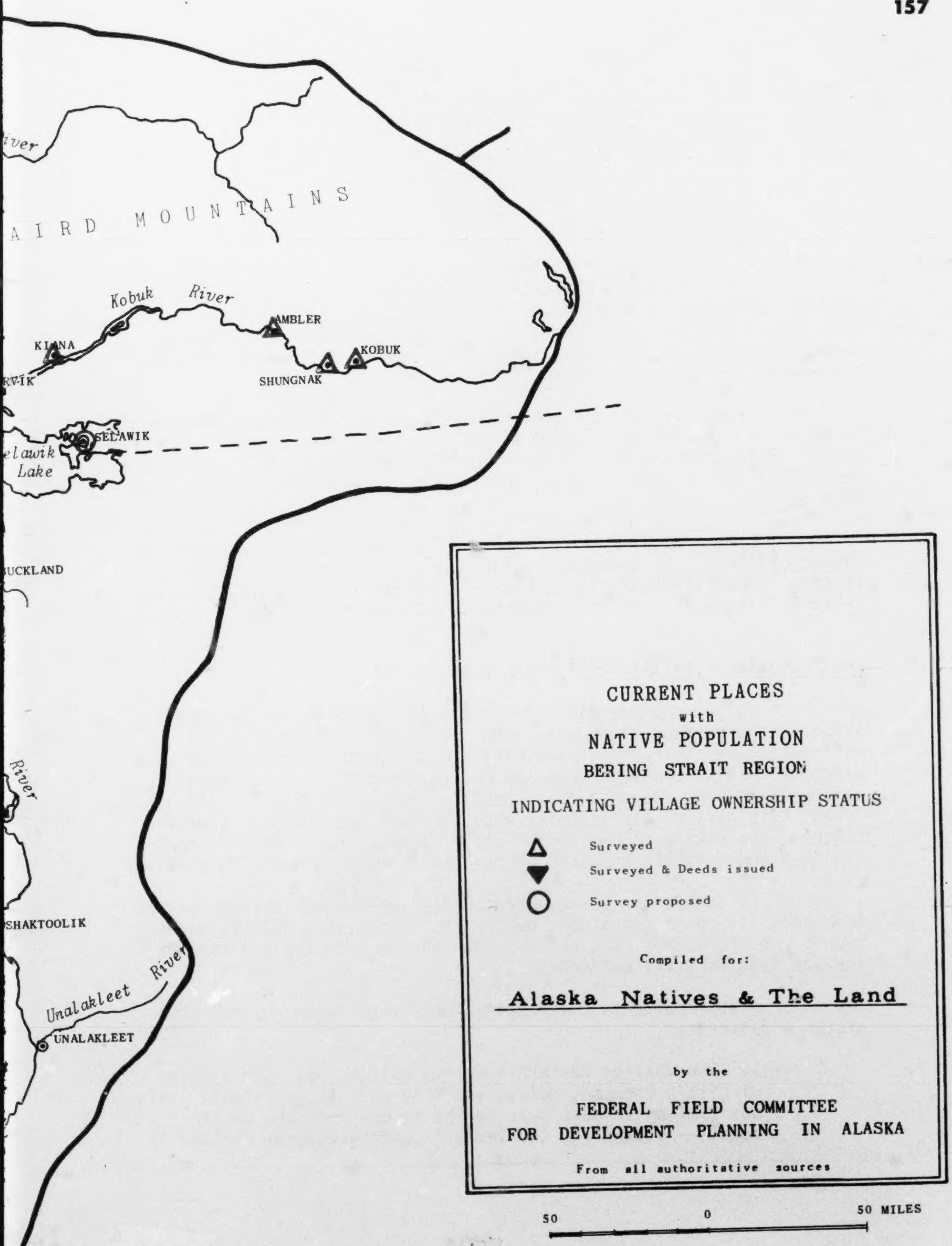
CHUKCHI SEA
KIVALINA
Noatak River
NOATAK
BAIRD MOUN
Kobuk River
KIANA
NOORVIK
SELAWIK
Selawik Lake
KOTZEBUE
Kobuk Lake
KOTZEBUE SOUND
SHISHMAREF
Little Diomede Is.
INALIK
BERING STRAIT
DEERING
CANDLE
BUCKLAND
WALES
SEWARD PENINSULA
BREVIG MISSION
TELLER
Kutzitrin River
MARY'S IGLOO
Niukluk River
Koyuk River
KOYUK
WHITE MOUNTAIN
GOLOVIN
ELIM
NOME
SHAKTOOLIK
CAPE DENBIGH
BERING SEA
NORTON SOUND
Unalakleet River
UNALAKLEET
STEBBINS
ST. MICHAEL

FIG. III - 31


AIRD MOUNTAINS
iver
Kobuk River
AMBLER
KIANA
KOBUK
SHUNGNAK
RVIK
SELAWIK
elawik Lake
BUCKLAND
River
SHAKTOOLIK
Unalakleet River
UNALAKLEET
50
0
50 MILES

CURRENT PLACES
with
NATIVE POPULATION
BERING STRAIT REGION
INDICATING VILLAGE OWNERSHIP STATUS

△ Surveyed
▼ Surveyed & Deeds issued
○ Survey proposed

Compiled for:

Alaska Natives & The Land

by the

FEDERAL FIELD COMMITTEE
FOR DEVELOPMENT PLANNING IN ALASKA

From all authoritative sources

FIG. III - 31

> their rivers for fishing or seal and beluga hunting. Occasionally entire families traveled a long distance from their home village for a joint fishing and trading venture. The practice of fishing a long way from home undoubtedly became more common after Siberian and American trade goods were obtained in large quantities.[37]

The literature of north Alaska cites various fragmented population estimates in historic times. Most appear inconclusive. However from a consensus of record we can probably add to the figures indicated previously for the arctic slope region a Seward Peninsula population of between 2,000 to 2,400.

Preceeding Figures III - 29, 30 and 31 indicate village locations in this region. One fact stands out--change is dynamic and still occurring in this region--although the forces at work are perhaps less acute than in the ever-changing settlement patterns of the Yukon-Kuskokwim delta.

Change continues -- it must -- because adaptation means survival. Villages are abandoned because of deaths, natural forces -- erosion, storm flooding, landslides -- fish and game supply, governmental pressure or just the inhabitants' desire for change.

Environmental Livelihood Patterns

In the characterization of the Arctic Slope eskimo, the historic and current dependency upon the biotic resources of the environment were stressed. Two historic ecological orientations were described -- the whaling focus and the caribou focus. The thesis was presented and examined that, despite changes in village life, the advent of a partial cash economy and the goods and tools of another culture, the eskimo of the region still, today, has to depend upon the fish and wildlife resource of his environment in order to survive.

In the Bering Strait region the subsistence pattern varies from that of the Arctic slope, but, with the possible partial exception of the Nome area, the eskimos' dependence upon the environment for survival is still paramount.

Historically in this region there were three general subsistence patterns:'

-- 1. The Whaling Pattern - whale, walrus, seal and fishing - of Little Diomede, Wales, and King and Sledge Islands (this was similar in most ways to the taremiut of the Arctic coast -- except for the latter's greater use of caribou.);

---

[37] *Ibid.*

-- 2. The Caribou Hunting Pattern - caribou, fishing, seal, and beluga - of Buckland, Deering and Candle, and;

-- 3. The Small Sea Mammal Pattern - seal, beluga, fishing, and caribou - of Golovin Bay, Teller and Shishmaref - Espenberg.

The subsistence patterns had three important aspects: 1) the mobility of the inhabitants seasonally for food getting; 2) the flexibility of the food quests, and the variety of principal foods utilized within one subsistence area, which led to: 3) the many alternatives offered in all subsistence patterns, but especially the Caribou and Small Sea Mammal patterns. The Eskimos of the Whaling Pattern were oriented to the sea more than were those of the other two patterns. Caribou and salmon were of little importance compared to sea mammals. However, both products were obtained through trade or travel to other territory.

Winter caribou hunting was most important to people of the Caribou Hunting Pattern. In the spring, however, the caribou hunters went to the bays or coastal areas of their rivers for beluga and seal hunting. For example, the Buckland people went to Eschscholtz Bay from their mountain winter caribou corral, Attenmiut ...; the Candle (Kugaluk) people went downriver on the Kiwalik from their caribou grounds. The Kauwerak people went to Tuksuk Channel and Agiapuk River for fishing and to Grantley Harbor for beluga and seal hunting from their inland villages on the Kuzitrin.

The Eskimos of the Small Sea Mammal Pattern lived mainly on seal and beluga, but also traveled short distances inland for caribou hunting. Caribou sometimes came in the winter to their coastal villages, particularly if the tundra pastures were snow-free. Thus it can be seen that almost all of the Seward Peninsula Eskimos in the eighteenth century had a diet that included caribou meat. The caribou began to decrease in the 1870's, and by the 1880's almost all had left the peninsula. The inland villages disappeared and the inhabitants moved elsewhere.[38]

---

[38] *Ibid.*

Facts on the dependent relationship within these regional patterns can be brought out by many references but definitive studies conducted in the region between Point Hope and Kotzebue, including the villages of Kivalina and Noatak, for the Atomic Energy Commission's "Project Chariot" are most useful as documented authoritative example.

> The village of Kivalina subsists mainly on a hunting and fishing economy, and the acquisition of food must be carried on constantly. The annual subsistence cycle for the Kivalina people is summarized here.
>
> From August to the middle of September, berry picking is an important part of the women's activities. Fish begin to arrive in the middle of August, but intensive fishing does not generally begin until the first of September. Activities from September to the first part of October revolve mainly around fishing, the fish camps being established on the Wulik River. Villagers fish for arctic cod through the ice of the lagoon from the time of freeze-up until the ice becomes too thick, generally about the end of November.
>
> Caribou hunting starts as soon as the caribou arrive in the autumn. Activity continues until the rivers begin to break up in the spring and travel conditions become difficult, which is usually the latter part of April.
>
> Trapping of the snowy owl begins about the middle of October and lasts for about a month while the birds are migrating south along the coast.
>
> Fur trapping begins in November and is concerned mainly with fox, wolf, wolverine, and land otter. Muskrat and ground squirrel are trapped in spring.
>
> A few seals are taken along the coast during the last of October or the early part of November. By the middle of December, the sea ice is usually thick enough to allow hunters to proceed out to leads to hunt, but this activity is hampered by short hours of daylight and frequent stormy weather. Participation in Christmas activities also causes a cessation of hunting.

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example.

Although some seal hunting occurs during the first part of January, conditions do not become particularly good until the end of the month. February is considered the best month for seal hunting, which becomes the focal point of activity during this month.

Ugruk are sighted sometimes in January and February and are taken whenever possible. With the increased hours of daylight and warmer weather in March and early April, many more seals are found on top of the ice; as a result, the hunting pressure increases. Belugas, or white whales, also generally become available in March or April, but sometimes the first kill is not made until July. Sea hunting continues on the ice until the ice breaks up in late May. From then until late June or early July, hunting is done from umiaks.

About the middle of April, many Kivalina people go to Point Hope to take part in the whaling activities there. A whaling camp was established in Kivalina during the latter part of April 1960 but was not reestablished in 1961.

Birds usually arrive in the area in the middle of April, although sometimes they do not arrive until about the first of May. Gull eggs are gathered about the first of June. In July men usually travel to Cape Thompson to get eggs from the cliff-dwelling murres. During the latter part of June and the early part of July, the women begin picking greens of edible plants. The summer months are also occupied by gathering driftwood along the coast and hunting occasional caribou.

May to October is the general employment season for men who obtain work in the summer months. When work is not available in Kivalina, these men may go to Kotzebue or even Fairbanks to seek employment.

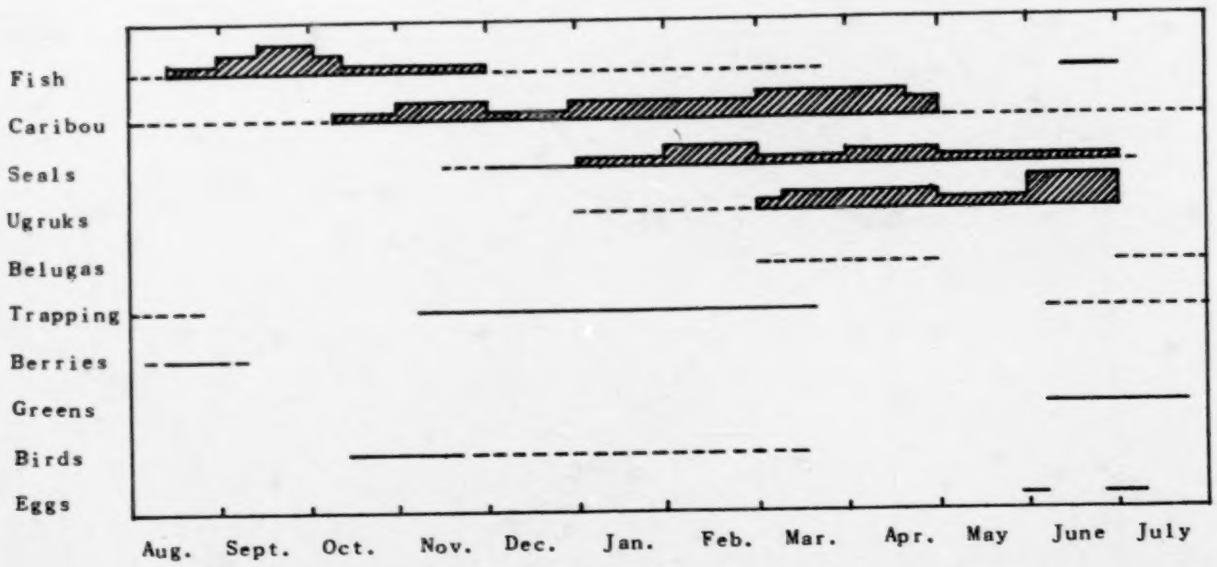
In August the berries begin to ripen, and the cycle begins anew.[39]

---

[39] Wilimovsky and Wolfe, *op. cit.*

FIGURE III - 32

ANNUAL SUBSISTENCE CYCLE
PEOPLE OF KIVALINA



Note: Cycle varies in approximate time of occurrence and intensity from year to year.

Source: Doris J. Saario and Brina Kessel, "Human Ecological Investigations at Kivalina," *Environment of the Cape Thompson Region, Alaska,* ed. Norman J. Wilimovsky, assoc. ed. John N. Wolfe (United States Atomic Energy Commission, Division of Technical Information, 1966.), pp. 969 - 1039.

It is possible to dwell at length on the statistics and technology of the Kivalina subsistence harvest, and on the historic transition of means of hunting in the Kivalina area or elsewhere in the Kotzebue Sound region or Seward Peninsula region. Rather than do this, though, we can use existing empirical and on-the-ground information to appraise the hunting-fishing subsistence area used by the villages of Point Hope, Kivalina and Noatak throughout the year.

The following maps in Figures III - 33, 34, 35, and 36 show the seasonal land use requirements of the three villages.

On these maps note 4 things:

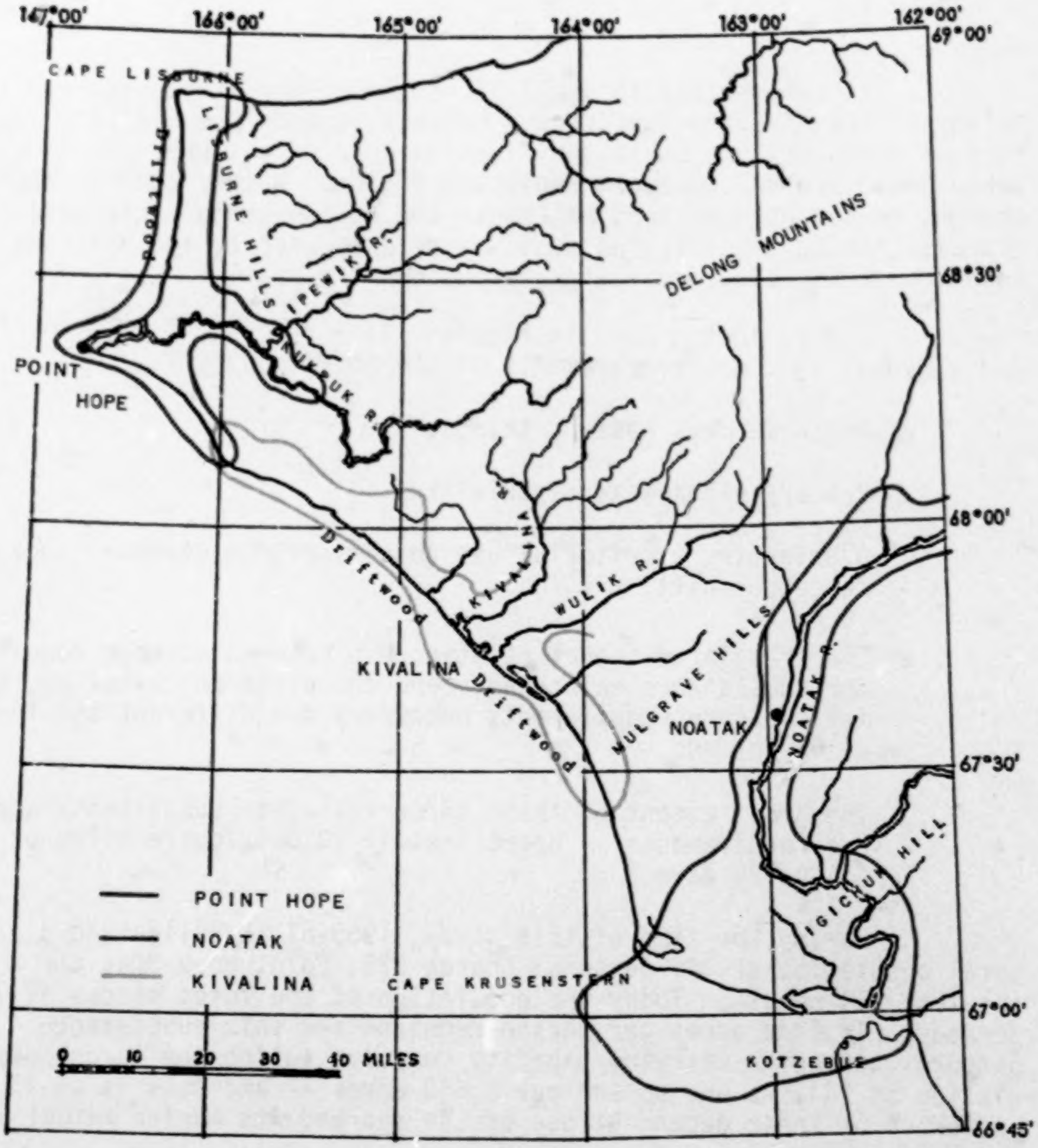
... Primary village territoriality.

... Overlapping territorial use depending upon seasonal subsistence pursuits.

... The changing seasonal relationship between acreage required for subsistence maintenance and the different lands and carrying capacity requirements necessary for different species of wildlife; and

... The gross extent of these three villages' subsistence acreage requirements -- approximately 10,048 square miles or 6,430,720 acres!

During the time of this study, 1959-61, Kivalina had a total population of 145 persons; Noatak 275; Point Hope 324; for a total of 744 people. Today the population of the three places is 718 persons. In land acres per person required for this subsistence pattern, the human carrying capacity computes (using the larger population of 744) to one person per 8,643 acres -- and this is still exclusive of their dependent use of the sea and its marine animal resource!


147°00'
166°00'
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163°00'
162°00'
69°00'
68°30'
68°00'
67°30'
67°00'
66°45'
CAPE LISBURNE
LISBURNE HILLS
Driftwood
IPEWIK R.
KUKPUK R.
DELONG MOUNTAINS
POINT HOPE
KIVALINA R.
WULIK R.
Driftwood
KIVALINA
Driftwood
MULGRAVE HILLS
NOATAK
NOATAK R.
IGICHUK HILL
CAPE KRUSENSTERN
KOTZEBUE
POINT HOPE
NOATAK
KIVALINA
0 10 20 30 40 MILES

FIGURE III - 33: Summer land-use areas utilized late June through August 1950-1960. Although not shown on the map, land was also utilized as far north as 69°45'N and as far east as 161°W.

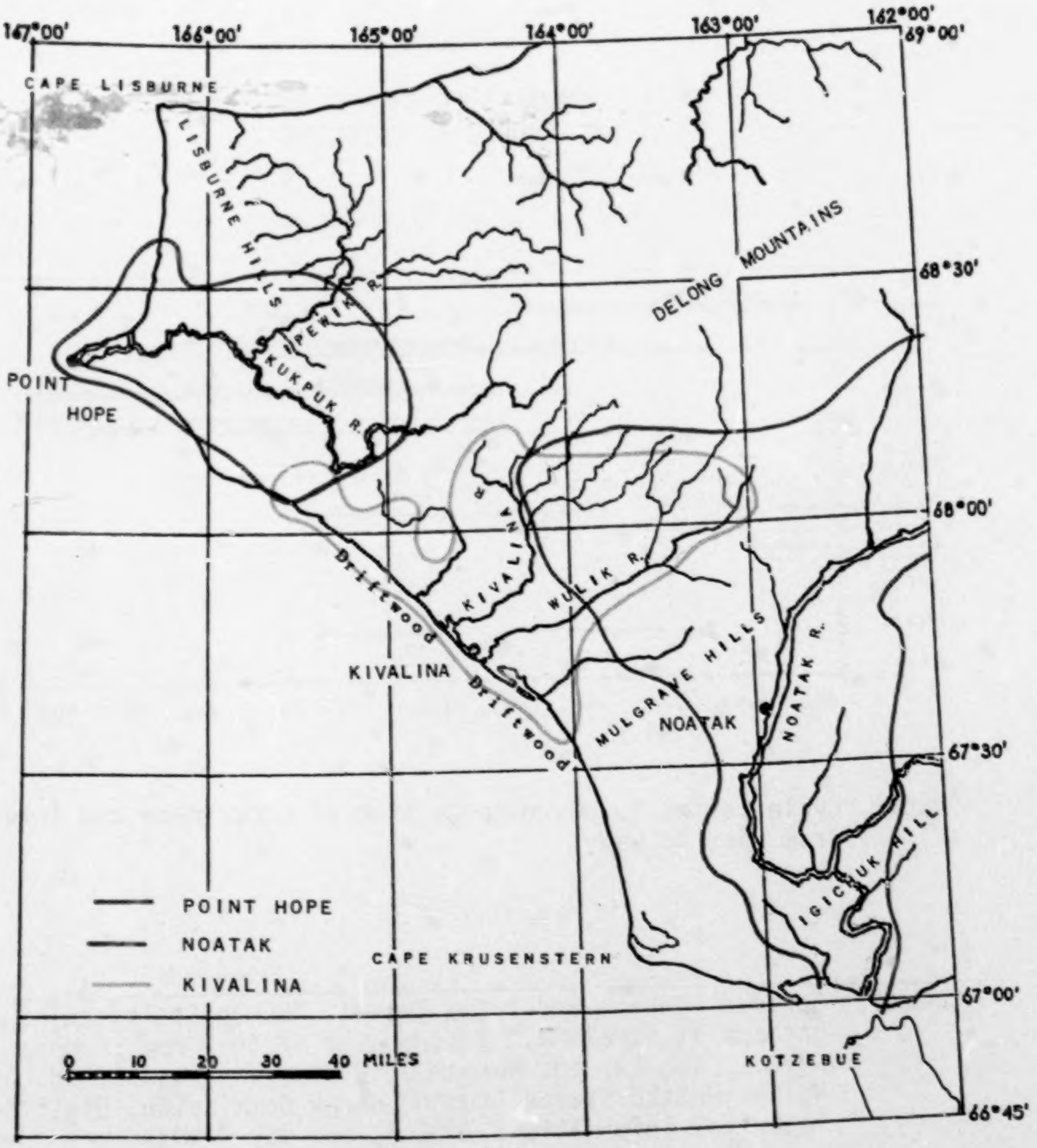
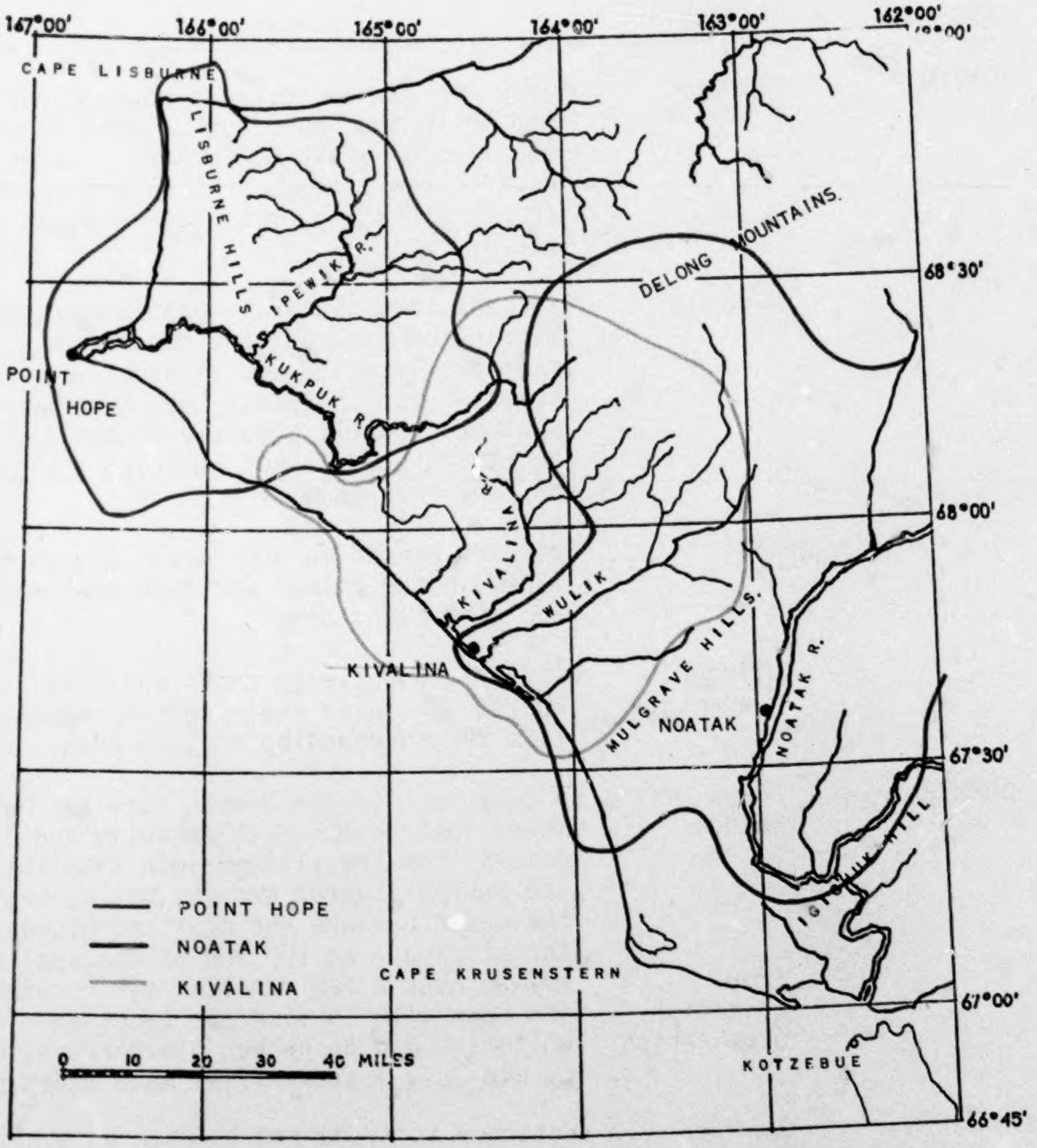

167°00'
166°00'
165°00'
164°00'
163°00'
162°00'
69°00'
CAPE LISBURNE
LISBURNE HILLS
PEWIK R.
KUKPUK R.
POINT HOPE
DELONG MOUNTAINS
68°30'
68°00'
KIVALINA R.
WULIK R.
Driftwood
KIVALINA
Driftwood
Driftwood
MULGRAVE HILLS
NOATAK
NOATAK R.
67°30'
IGICHUK HILL
CAPE KRUSENSTERN
67°00'
POINT HOPE
NOATAK
KIVALINA
0 10 20 30 40 MILES
KOTZEBUE
66°45'

FIGURE III - 34: Autumn land-use areas utilized early September to mid-November 1950-1960. Although not shown on the map, land was also utilized as far north as 69°45'N and as far east as 158°30'W.


167°00'
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CAPE LISBURNE
LISBURNE HILLS
IPEWIK R.
KUKPUK R.
DELONG MOUNTAINS
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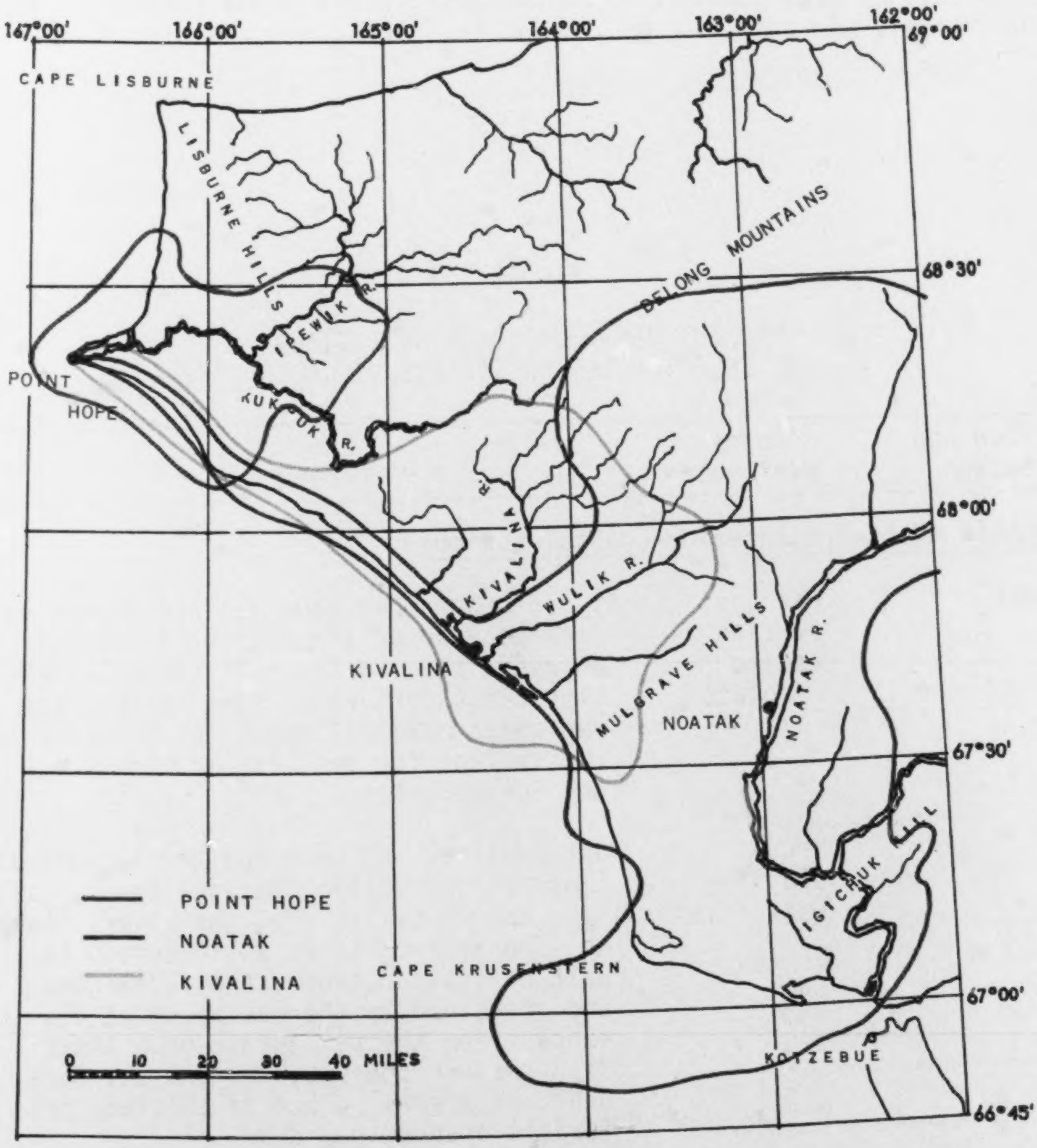
POINT HOPE
68°00'
KIVALINA R.
WULIK
KIVALINA
MULGRAVE HILLS
NOATAK
NOATAK R.
67°30'
IGICHUK HILL
CAPE KRUSENSTERN
67°00'
KOTZEBUE
66°45'
POINT HOPE
NOATAK
KIVALINA
0 10 20 30 40 MILES

FIGURE III - 35 : Winter land-use areas utilized mid-November to March 1950-1960. Although not shown on the map, land was also utilized as far north as 69°45'N and as far east as 161°W.

167°00'
CAPE LIS
POINT
HOPE
0 10

FIGURE III
1950-1960.
as far nor

Source:


167°00'
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69°00'
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CAPE LISBURNE
LISBURNE HILLS
IPEWIK R.
KUKPUK R.
POINT HOPE
DELONG MOUNTAINS
KIVALINA R.
WULIK R.
KIVALINA
MULGRAVE HILLS
NOATAK
NOATAK R.
IGICHUK HILL
CAPE KRUSENSTERN
KOTZEBUE
POINT HOPE
NOATAK
KIVALINA
0 10 20 30 40 MILES

FIGURE III - 36: Spring land-use areas utilized mid-March to June 1950-1960. Although not shown on the map, land was also utilized as far north as 69°45'N.

Source: D. C. Foote and H. A. Williamson, "A Human Geographical Study," *Environment of the Cape Thompson Region, Alaska*, ed. Norman J. Wilimovsky and assoc. ed. John N. Wolfe (United States Atomic Energy Commission, Division of Technical Information, 1966), pp. 1041- 1107.

For further illustration of the people's dependence, in this region, upon the biotic resources, the following summaries show the variety and scope of this demanding food quest activity.

FIGURE III - 37

PRESENT DAY FOOD QUEST ACTIVITIES OF SELECTED BERING STRAITS VILLAGES

Place and Season	Foods Available	Remarks
NOATAK (Northern Interior-Coastal Eskimo)		
FALL	Caribou Berries Eskimo Potato	By September most families are in the village because of the opening of school. However, the men in small groups establish camps upriver to hunt caribou and the women make all day trips out from the village for berries, and 'mashu', the Eskimo potato.
	Trout Grayling Whitefish	Most families who camp upriver as well as those at the village may net trout, grayling and whitefish from the river. Later, as soon as the ice is solid enough to walk on (late October) the older women and occasionally the men go short distances from the village to hook these fish through the ice. An unusual lure used was a small piece of colored, preferably orange, gum drop.
WINTER	Caribou	Hunting for caribou continues as long as they are available within a reasonable distance from the village.
	Fish Trout Whitefish Grayling Suckers	As soon as the ice along the river has frozen sufficiently, the women and the men, too, if they are home, hook fish through the ice. Trout is the most abundant fish and a good fisherman during the run will get as much as two gunnysacks full at a time. Other fish available in lesser amounts are the whitefish, grayling and suckers.

Place and Season	Foods Available	Remarks
SPRING	Bowhead Whale	A few men may go to Point Hope to participate in the whale hunt. Only limited supplies of whale muktuk are brought back to the village. It is a seasonal treat rather than a regular item on the dietary.
	Rabbits	From the last of April through May, depending on snow and ice conditions, families leave Noatak -- usually by dogteams -- for the coast near Cape Krusenstern, settling mostly at Sealing Point and at Kuluksuk (meaning a place of many rabbits).
	Seal	Seal are hunted in open leads and on ice floes, using either dog team or boat as ice conditions demand.
	Wildfowl and Eggs	Wildfowl, especially ducks and geese, are hunted and later their eggs are gathered from the surrounding nesting area.
SUMMER	Ugruk Beluga	By July most of the Noatak families have moved their camps to Sheshaulik and late comers from the village join them there. The men hunt ugruk and the beluga whale; the women prepare the meat and blubber for storage.
	Trout Whitefish Blueberries	At the end of the seal and beluga hunt a few families may remain at the camp site to fish for trout and whitefish and to gather blueberries, but by mid-July most families have moved to
	Caribou	Kotzebue to trade and to pick up available wage work. By early August many families are already returning to Noatak. The men usually go up river to hunt caribou. Eventually most families scatter to their camps along the Noatak River below and above the village.
	Salmon	Here they net salmon and dry it on racks or otherwise prepare it for later use. Most of the salmon is used for dog feed although if the weather is good for drying fish, they will be used for human food too.

Place and Season	Foods Available	Remarks
SHUNGNAK (Northern Interior Eskimo)		
FALL	Moose	Most families have returned to the village by this time -- the women from their fish camps, the men from their summer wage work. According to the Shungnak Eskimos moose have always been present in the upper Kobuk area but never in large numbers -- 4 to 5 is generally the largest number taken in a year. The area was closed to the hunting of this animal at the time the villages participated in the dietary study (1959-60).
	Porcupine	Porcupine, once plentiful in the area, are now scarce. Only an occasional one is now caught. This animal was at one time an important source of fat.
	Ptarmigan Spruce hens	Ptarmigan and spruce hens are usually available in moderate numbers near the village at this time. They are snared or shot with a .22 rifle.
	'Mashu'	'Mashu', the edible root of *Hedysarum alpinum*, is usually collected in good quantity from along the river banks and from the innumerable gravel bars in the river. Some years as many as three large gunny sacks full per family are stored for winter use.
	Crowberries Low-bush cranberries	Most years from 50 to 100 pounds -- sometimes more -- of crowberries and low-bush cranberries are collected and stored per family.
	Currants Rose Hips Raspberries	The fruit of the wild currant, rose and raspberry are available in limited amounts. They are usually collected casually during the summer -- i.e. they are eaten off the bush.
	Whitefish	During October, whitefish, the last of the migrant fish to descend the Kobuk River, are obtained by trapping or netting them under the ice. They are available for a limited time only and used fresh.

Place and Season
SHUNGNAK (Contd
WINTER

Place and Season	Foods Available	Remarks
SHUNGNAK (Contd)		
	Caribou	Caribou strays sometimes drift into the area in September and sizeable herds are usually in residence in the general area by October.
WINTER	Caribou	Caribou is the most important winter food in the diet of the Eskimos living in the upper Kobuk River area. Serious hunting of this animal begins in October and continues through April. In the most common migration pattern followed by the caribou they drift south from the Noatak drainage area through passes in the Brooks Range to the headwaters of the Selawik River. Here they stay throughout the winter, leaving just before the ice breakup is imminent. They usually fawn in the Colville River drainage area.
	Ling Cod	Intermittently, from November through about February, ling cod are obtained in moderate quantities by trapping under the river ice. They are used mostly as dog feed although the liver and roe are relished by the people.
	Ptarmigan Spruce hen	In December, ptarmigan and spruce hen, usually abundant in the area, are either snared by the women or shot with a .22 rifle by the men.
	Snowshoe hare	The snowshoe hare, formerly plentiful in the area, has not been seen since 1956.
	Beaver Muskrat	Beaver can be trapped in some areas but at a considerable distance from the village. Muskrats are obtained by trapping or shooting with a .22 rifle. Both of these animals were important late winter foods in aboriginal times, especially for those families who had winter camps favorably located for their acquisition. They are scarce, however, in the immediate Shungnak area and to obtain significant numbers requires much travel; hence, they are little used now.

Place and Season	Foods Available	Remarks
SHUNGNAK (Contd)		
SPRING	'Parka' squirrel	Throughout May and into early June most Shungnak families establish temporary camps on high ground near or at best only short distances from the village. During this time ground squirrel may be obtained by trapping, snaring or shooting with a .22 rifle.
	Pike Sucker Ducks Geese	Pike and sucker may be obtained from valley lakes and sloughs; ducks and geese are hunted during migration and later in the season their eggs are obtained from local nesting areas. None of these foods is available in large quantities.
	Sheefish Whitefish Grayling Pickerel	In June, after the ice has gone from the river, sheefish and whitefish -- now on their upriver migration -- and grayling and pickerel are obtained in variable quantities using seines and gill nets.
	Wild Edible Greens	Late in the season wild edible rhubarb and sourdock are sometimes obtained in quantity and often moderate amounts are stored for winter use.
SUMMER	Dog Salmon	While the dog salmon run starts in June, the greater share of the catch is harvested in July and early August. This fish is one of the most important of the food resources of these people. It is obtained in quantity by seining and gillnetting. The women have the complete responsibility for both the fishing and the subsequent preparation of the catch for storage. Their traditional family camp sites are scattered along the river both above and below the village, occasionally at considerable distance from it. Salmon is used fresh in season but most of the sizeable catch is dried and stored to be used in winter for dog feed. Limited amounts of dog salmon -- most often the heads -- are buried in ground pits and allowed to putrefy. The resulting

Place and Season	Foods Available	Remarks
SHUNGNAK (Contd)		
	Dog Salmon	cheesy-textured mass is a favorite on early fall diets.
	Blueberries	Blueberries are usually plentiful in the area and most families try to store from 100 to 150 pounds each for winter use.
	Bear Hoary Marmot	At this season of the year an occasional brown or black bear or a hoary marmot may be taken. Fat from the latter animal used to be a prized food but since most of the men now work in the summer for wages (in the mines, etc.) they rarely make the extended hunting trips to the mountains for these animals as they did in the past.
	Cloudberries	Cloudberries, the years when they are available, are eaten fresh in season. They are rarely available in sufficient quantities for storage.
SHISHMAREF (Northern-Coastal Eskimo)		
FALL	Berries	Crowberries, blueberries, low-bush cranberries and cloudberries are often available in significant quantities from the tundra in the vicinity of the village and from the mainland tundra area also. Crowberries and cloudberries are the favorites and most families store from 50 to 100 pounds or more for winter use.
	'Mouse-nuts'	In times past the Shishmaref people made special trips in the fall of the year to the mainland for 'mousenuts' (*piknik*) but this is rarely done today. Early health workers discouraged the practice thinking it was a possible source of disease and illness. This food, however, is thoroughly cooked before eating and is probably safe.

Place and Season	Foods Available	Remarks
SHISHMAREF (Contd)		
	Wildfowl	Ducks and geese are still hunted on the mainland. Relatively small numbers are stored for winter use. The total take is probably much less than in former years since many of the active hunters are away on summer jobs and do not return to the village until after the birds have left on their southern migration.
	Squirrels	Moderate numbers of both the ground squirrel and flying squirrel are obtained. The furs are used to make parkas and the meat used as food.
WINTER	Seal	Sealing is sporadic, depending always on the weather. It begins in November after the shore ice is solid enough for walking and dog-team travel, and continues until the ice goes out sometime in late May or early June.
	Polar bear	Some years one or two polar bear may be caught, sometimes none at all.
	Tom cod Flounder Sculpin	Throughout the winter tom cods, flounders or bullheads (sculpins) are caught by the women and older people of both sexes by jigging through ice holes in the inlet and the lagoon in back of the village.
	Rabbits Ptarmigan	Whenever weather permits, the men make mainland trips to hunt rabbits and ptarmigan. They are not found in abundance.
SPRING	Willow (inner bark)	The inner bark of the willow, *Salix alaxensis,* is sometimes collected in late April and early May -- at about the time the sap begins to run. The outer bark is carefully cut and removed and the thin inner layer is scraped off with a knife. The Eskimo name for this food is 'keeleeyuk' meaning the 'scrape'. This is a very incidental food collected by the men while hunting on the mainland for rabbits and ptarmigan, but they often bring back limited amounts of all of these foods for the family.
	Rabbits Ptarmigan	

Place and Season	Foods Available	Remarks
SHISHMAREF (Contd)		
	Ugruk Seal	Ugruk is hunted and captured, usually in good quantities, on the pack ice in late May and June or as long as the pack ice persists and is safe. A good hunter at this time may obtain 12 to 14 ugruk as well as many smaller seal. The meat is either completely air-dried or small quantities may be only partially air-dried and then stored in seal oil. The blubber is cut into small pieces, stuffed into clean seal pokes and stored in the cold. During a good year enough seal and ugruk are caught within a two to three week period to furnish a good share of the entire year's supply of meat and oil. By tradition, young boys 13 to 14 years of age accompany the older hunters at this time. The boy's first catch goes to the oldest man in the camp. Prize young seal skins are carefully cleaned and pegged out on the ground to dry. They are later tanned and used to make sealskin parkas and pants.
	Geese Ducks	In May wildfowl, now on their northern migration, are hunted but usually the amount taken is enough for immediate daily use only.
	Wildfowl eggs	Later, in June, small quantities of duck and geese eggs, and larger supplies of gull eggs, are collected and used in the daily diet.
	Wild edible greens	Sourdock is the most important of the locally available wild edible greens and it is usually collected in sufficient quantity by most families to store for winter use. These greens are cooked before storage.
		Willow buds and leaves, from the smooth-leaved ground varieties, chiefly *Salix arctica,* are also collected in quantity and stored for winter use. They may be pre-cooked but most often they are left

Place and Season	Foods Available	Remarks
SHISHMAREF (Contd)		
		raw and are lightly marinated with seal oil just prior to storage in the cold. This product is called 'surrah'. Other greens and plant parts used in lesser amounts are *Sedum roseum*, both the leaves (*Eveeakluk*) and the root (*Ekutuk*); the leaves of the marsh marigold (*Caltha palustris*); and the flower of the wooly lousewort (*Pedicularis lanata*); the latter, to which a small amount of water is added, and then allowed to sour is called *Nahzakmetak*.
SUMMER	Herring Smelts	A moderate but significant herring run occurs along the coast near Shishmaref. Smelts may also be available but in lesser amounts. Excess fish beyond immediate needs are dried for winter use.
	Salmon	There is a relatively small salmon run in July and limited amounts are also dried for future use.

Source: Christine A. Heller, Ph. D. and Edward M. Scott, Ph. D. *The Alaska Dietary Survey 1956-1961*. U. S. Department of Health, Education, and Welfare, Public Health Service, Nutrition and Metabolic Disease Section, Arctic Health Research Center, Anchorage, Alaska, pp. 251-259.

Four other brief sketches from the historic record will help to round out the ecological livelihood patterns of this region: first, to the south along the shore of Norton Sound where the Unalit or Unaligmiut dwelt between St. Michael and Golovin. Subsistence patterns were essentially the same whether at Golovin or Unalakleet.

> Walrus and whales were absent in this area. Seal hunting was important, and caribou hunting was exceptionally good in the hills between the Inglutalik and Koyuk rivers. Beluga were plentiful at the mouth of the Inglutalik River and in Golovin Sound. Fish were important everywhere, and the mouth of almost every river was a potential, if not an actual, campsite. Some places were known to be better than others; for instance, coastal fishing near the town of Moses Point was known always to have 'the best fishing,' and Fish River was 'always to be depended on.' Short rivers could supply the needs of only a single family, but large rivers like the Koyuk and Fish rivers supported many camps. The Fish River Eskimos, whose principal aboriginal food was fish, had an abundance of salmon, as well as whitefish, trout, grayling, and pike.
>
> Large herring were especially plentiful around Golovin Bay. A perpetual spring on the Kwik River west of Bald Head is said to have furnished a limited amount of salmon all year round.
>
> Thousands of ducks and geese were caught on Golovin Bay in the spring, and innumerable flocks of ptarmigan were snared in brushy areas everywhere in the winter. Eggs, hunted both on cliffs and on the tundra, were an important part of the diet. Berries, Eskimo potatoes, and various greens were extensively utilized.[40]

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[40] Ray, "Nineteenth Century...," *op. cit.*, pp.66-67.

Second, the southwest coast of the Seward Peninsula and nearby King Island and Sledge Island offers another pattern variant.

> The mainland coast, outside the migration path of walrus and whale, had less food resources than the Golovin Bay or Port Clarence areas. However, the King Islanders depended heavily on walrus and actively pursued whales. Even Sledge Island, only 20 miles from the mainland in this area, was noted for its large herds of walrus in the mid-nineteenth century. Apparently whaling had also been carried on, because William B. Van Valin, teacher at Sinuk on the mainland, found a shaman's whaling kit of figures and amulets hidden in a rock pile on Sledge Island (1941: 47-48). These two islands, with their comparative wealth of food, accounted for almost half of the area's population.
>
> Despite the lack of easily obtained walrus and whale, there was abundant caribou, ptarmigan, fish, and seal for a limited number of mainland families. The area also had good supplies of ground squirrels, rabbits, and bear. One man told me that a village would not be established in that area unless ptarmigan and rabbits were found nearby. Because rivers were not large like the Koyuk and Fish, the majority of fishing was done at the mouths; only a few camps were found upstream on the Nome and Snake rivers. Salmon, trout, and grayling were the principal fish. Beluga were caught, as a rule, only near Cape Nome and Cape Douglas. In the spring, ducks, geese, and swans were plentiful, particularly in the Safety Lagoon area. Blueberries, salmonberries, and the juicy, smooth, blackberry ('aziak') were found in abundance. The inhabitants of this area also ate a great deal of roots and greens.[41]

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[41] *Ibid.*

Third, the area about Port Clarence and inland along the Kuzitrin River provides a slightly different ecological orientation.

> This area had large herds of caribou in the past, particularly north and east of Kauwerak village. Productive fishing was undertaken at almost all times of the year, but particularly in the spring in Tuksuk Channel and in summer and fall in Imuruk Basin and Grantley Harbor, and tributary rivers. Ptarmigan in the winter, and ducks and geese in the summer were plentiful. There was no walrus or whale hunting in this area, although sea mammal products were obtained by trade. Even the inland people made oomiaks of walrus hide for travel on the rivers and ocean. Beluga and spotted seal came into Grantley Harbor to be taken in nets near the entrance to Tuksuk Channel. In winter and spring seals were sought at Point Spencer, and by the middle of May many of the inland people had arrived for hunting. However, some families from Port Clarence and Grantley Harbor also went to Cape Douglas for sealing. As early as April fishing sites were blanketed with proprietary rights, having been handed down from father to son generation after generation .... Permission was needed to fish in particular spots. This was also true on the Agiapuk and Kuzitrin rivers. Wales people also came to this area to fish, and Port Clarence people, in turn, went as far north as Palazruk for winter sealing. The general annual fishing pattern was to fish first in April for whitefish in Tuksuk Channel, in July and August for salmon in various other rivers, and just before freezeup in the fall (September) for herring and tomcod. Great quantities of fish, mainly whitefish, were obtained both summer and winter in the lower Kuzitrin. Flounder were got in quantity near the large spit across from Nook in early summer where a dozen fishing parties might be located along its length.[42]

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[42] *Ibid.*

Fourth, the region adjacent to the Bering Strait -- Wales and Little Diomede Island -- offers still another view of man's adaptation to his environment.

> The southernmost whaling area of the Alaskan Arctic was in the Bering Strait. The Diomede Islands and Cape Prince of Wales were ideally located for the pursuit of the whale. The vast herds of migrating walrus usually passed through the strait between May 15 and the end of June. With seal and oogruk plentiful, the population of the comparatively small area of Bering Strait itself reflected the great wealth of natural resources. The inhabitants were known to be fearless men of the sea and ice. They also hunted polar bear when ice conditions were favorable. Their technology in material culture was unsurpassed in the Eskimo area, and elaborate ceremonies grew up around whale hunting. Their tools and art reflected plentiful raw material and a substantial amount of leisure time.
>
> Caribou thrived inland in great herds, but the Wales and island people concentrated on sea mammals. Therefore, only a few families from the areas to the north, particularly around Shishmaref, carried on inland caribou hunting. Salmon were not caught in the rivers between Port Clarence and Cape Espenberg. (They were, however, found in the rivers of Kotzebue Sound.) Tomcod were caught through shore ice everywhere along the coast, and flounders were found in specialized shallow waters.
>
> ....
>
> Besides whale and walrus, the Diomede Islanders ate immense quantities of birds and bird eggs. They were great travelers to both Siberia and the Alaskan mainland, and built large, sturdy oomiaks. Diomeders occasionally wintered at Wales. They traded with both continents, and after the Russian fur trade began in earnest during the latter half of the eighteenth century, often joined the Chukchi in trading for skins at Kotzebue Sound.[43]

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[43] *Ibid.*

The trading with Siberia is now at an end -- but the Diomede people as well as many others from the Bering Strait region are still great travelers. In fact they now travel more freely and more often than ever -- around the Seward Peninsula to Nome and Kotzebue and to Fairbanks and Anchorage particularly. Many of them that do travel are among the best ivory carvers and they simply take their tools and craft with them wherever they go.

But just as these people traveled and traded in oomiaks in an earlier day and returned home, so is the pattern of returning home active in aircraft today -- especially in the spring for the walrus or whale hunting.

BERING SEA REGION

Ethnic Settlement Patterns

Man has lived, as far as is now known, on St. Lawrence Island since about the beginning of the Christian era.[44] Historic cultural attachments[45] as well as linguistic ties associate the St. Lawrence people with the Eskimo of the Asiatic mainland from East Cape to Anadyr Sound. According to Hughes,[46] "The closest cultural relatives of the St. Lawrence Island people therefore live on the Chukotski Peninsula, only thirty-eight miles distant, in the village of Ungwaezik (or Chaplino)....

It appears that Chibutak or Sivokak (present-day Gambell) has since early times been the site of the island's main village--the central place to which all other settlements, hunting and fishing camps were secondary. This location had some practical ecological rationale behind its choice. Simply put--it was, and is, the best location for walrus hunting and whaling. Of some secondary significance was probably the proximity of this site to the Asiatic peoples of the mainland.

Numerous smaller villages and fishing and hunting camps have surrounded the island since man's first occupation. These, however, are owned by or identified with individual families or groups; and no other large comparable village has existed on the island until recent times, when Savoonga, a former reindeer-herding camp, became a permanent village. Now again, just recently a small permanent village has developed at Northeast Cape in association with a military installation.

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[44] J. Louis Giddings, *Ancient Men of the Arctic*, New York: Alfred A. Knopf, 1967.

[45] *Ibid.*

[46] Charles Campbell Hughes and Jane Murphy Hughes, *An Eskimo Village in the Modern World*, Ithaca, New York: Cornell University Press, 1962.

FIGURE III - 38

HISTORIC NATIVE PLACES AND CURRENT STATUS

BERING SEA REGION

NATIVE GROUP	HISTORIC PLACES	EXISTING SETTLEMENT POPULATIONS			STATUS UNKNOWN	SEASONAL CAMP SITE	ABANDONED	ANTIQUITY SITE
		25 - 299	300 - 999	1000 +				
Eiwhuelit	The Eiwhuelit inhabited St. Lawrence Island. Their settlements were:							
	Chibukak or Sivokak, present-day Gambell. Located on Northwest Cape, northwest tip of St. Lawrence Island. Name changed to Gambell in 1898.		X					X
	Chitnak (or Shetnak), on south shore of St. Lawrence Island. Reported in 1849. At Siknik Cape.					X		
	Kialegak, on Kialegak Point, 4 miles northeast of Southeast Cape. Former camp reported in 1849.					X		
	Kukuliak (or Kookoolik), on Kookoolik Cape 4 miles east of Savoonga on the north coast of St. Lawrence Island. An old village; name first reported in 1932. Savoonga is present place.		X					X
	Puguviliak (or Powooiliak) on south coast of St. Lawrence Island, six miles northeast of Southwest Cape at Powooiliak Point. Eskimo camp first reported in 1849.					X		
	Punuk (or Poonook) on one of Punuk Islands in the Bering Sea east of St. Lawrence Island. Former village or camp reported in 1886.					X		

The following is a list of other camps of recent reference and name which may or may not be historic, but their presence illustrates seasonal use over all of St. Lawrence Island which is in itself historic.

Akeftapak or Afiktapohak, six miles southeast of Gambell on north coast of St. Lawrence Island.

Ningeehak, two miles northwest of Aghnaghak Lagoon and nine miles southeast of Gambell.

Naskok camp, on Bering Sea coast near west end of Niyrakpak Lagoon, twelve miles southeast of Gambell.

Tapphook (var. Apatiki Camp), on Taphook Point on north coast of St. Lawrence Island, 19 miles southeast of Gambell.

Ataakas Camp (var. Taphaparak), 12 miles southeast of Savoonga, one mile west of Singikpa Cape, north coast of Island.

Camp Iveetok, 20 miles southeast of Savoonga, northeast coast of St. Lawrence Island.

Sooghmeghat (var. Alowas Camp, Nelsons Camp, Tamnik Camp), north coast of St. Lawrence Island, 22 miles west of Northeast Cape.

Camp Sevok (or Sevak), on Saighat Beach, north coast of St. Lawrence Island, 45 miles southeast of Savoonga.

Camp Kulowiye, at Northeast Cape, St. Lawrence Island.

Kangee Camp, at Tikugha Point, north coast of St. Lawrence Island.

Kangkok (or Koughkok), site of village on Kongkok Bay, 27 miles south of Gambell on west coast of St. Lawrence Island.

Imughialuk (var. Booshu Camp, Mokhoweyik Camp, Moowcokyik Camp), near west coast of St. Lawrence Island on Moghoweyik River.

Kitngeepalok (kitnepaluk, Okilerit), may be site of old Eskimo village; 20 miles south of Gambell on west coast of St. Lawrence Island.

Kavalrok, site of camp or village 10 miles south of Gambell, near Singik Point, west coast of St. Lawrence Island.

Lietnik Camp, between Kangighsak and Kitnagak Points, northeast coast of St. Lawrence Island.

Sources: Giddings, J. Louis. *Ancient Men of The Arctic*. New York: Alfred A. Knopf, 1967.

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Compilation by David M. Hickok, Federal Field Committee for Development Planning in Alaska.

NED ANTIQUITY SITE

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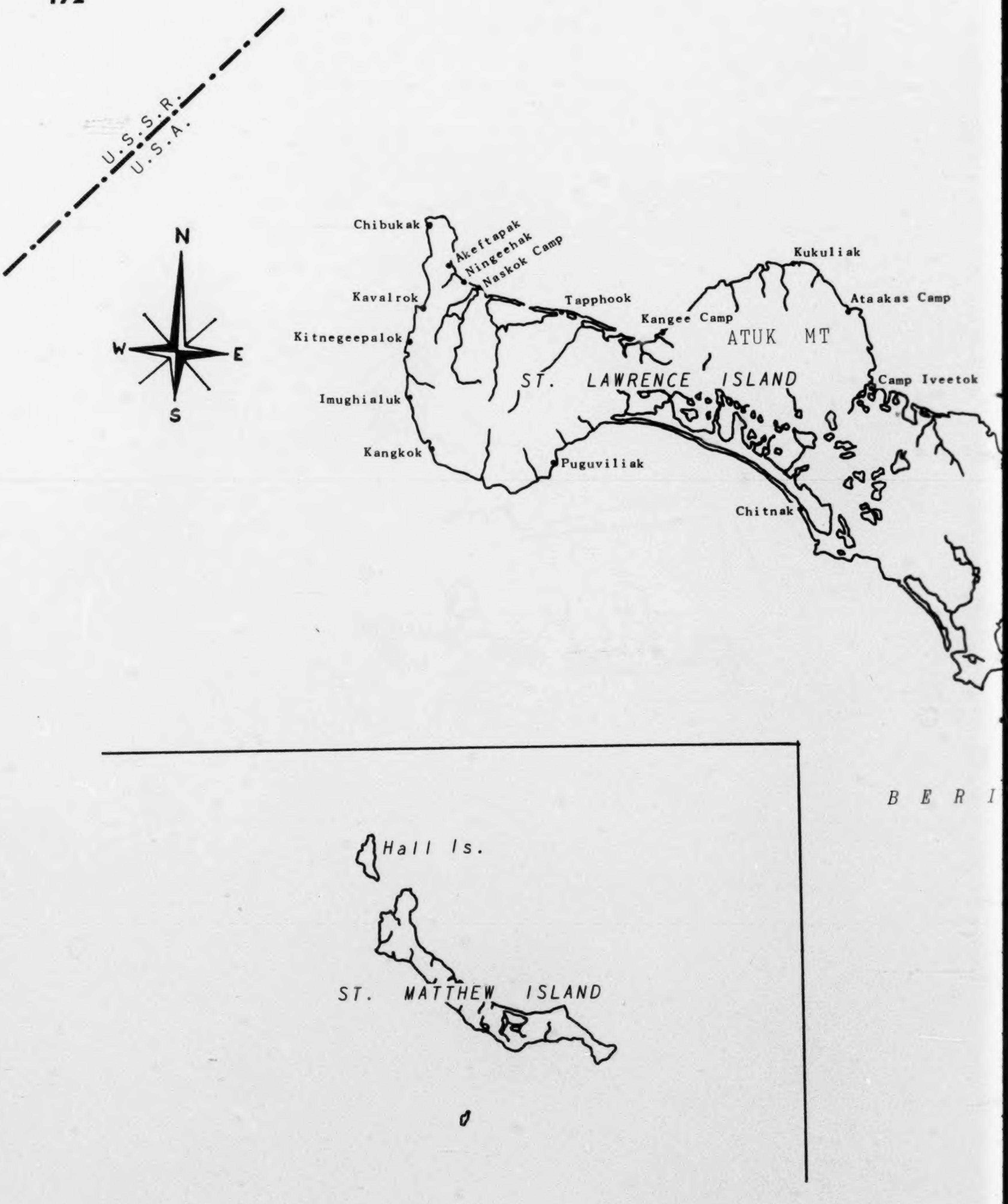
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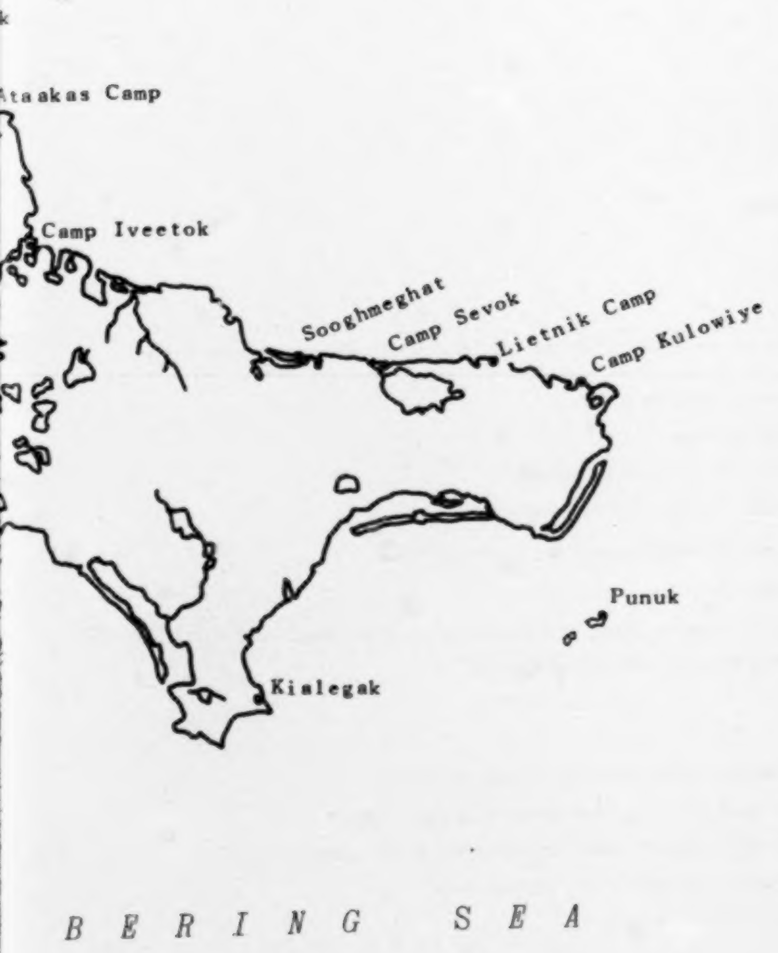
FIGURE III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Ataakas Camp
Camp Iveetok
Sooghmeghat
Camp Sevok
Lietnik Camp
Camp Kulowiye
Punuk
Kialegak
B E R I N G S E A

HISTORIC NATIVE PLACES
BERING SEA REGION

Compiled for:

Alaska Natives & The Land

by the

FEDERAL FIELD COMMITTEE
FOR DEVELOPMENT PLANNING IN ALASKA

From all authoritative sources.

0 25 50 MILES

FIGURE III - 39

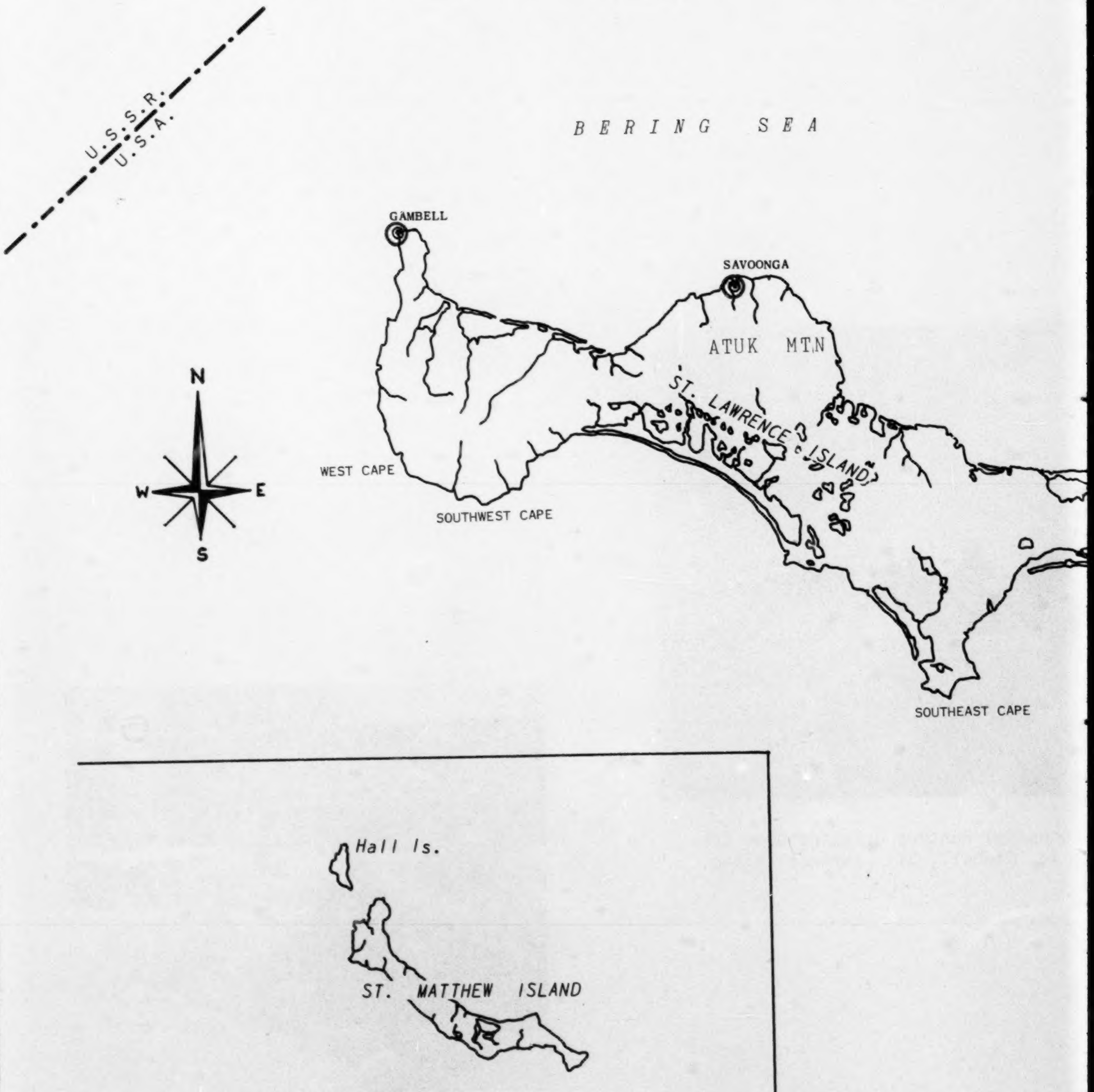
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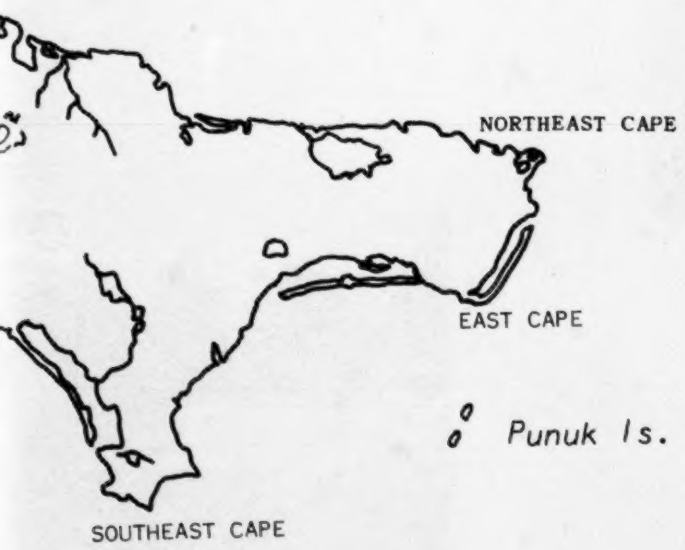
FIG. III - 40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Punuk Is.
SOUTHEAST CAPE

CURRENT PLACES
with
NATIVE POPULATION
BERING SEA REGION

INDICATING VILLAGE OWNERSHIP STATUS

○ Survey proposed

Compiled for:

Alaska Natives & The Land

by the

FEDERAL FIELD COMMITTEE
FOR DEVELOPMENT PLANNING IN ALASKA

From all authoritative sources

0 25 50 MILES

IG. III - 40

In historic times, the winter of 1878-1879 was catastrophic to the island's population. From whatever cause--reports differ--drunkenness from liquor acquired in October trade with the whalers which caused the islanders to miss the walrus herds going by in November, thus causing starvation; or from sickness and starvation alone; or because of southerly winds from November to January keeping the winter ice and walrus herds away from the island--an estimated 1,500 people died, and the island's population has never recovered.[47]

Several of the small villages around the island were decimated at this time.

Human occupancy of St. Lawrence Island has, of course, always been a tenuous thing; and in recent as well as historic times, environmental factors have caused food shortages, malnutrition, and starvation, with resultant population and settlement shifts.

Essentially, though, the settlement pattern in more recent times has been affected more by government, church, and trade than by the environment.

Environmental Livelihood Patterns

> One thing white people don't understand is that we Eskimos can't grow anything. All we can do is hunt, hunt, hunt.[48]

Again, as in other regions of Alaska's Arctic, the Native population is primarily dependent upon his environment to obtain food and sustain life.

On St. Lawrence Island the subsistence pattern is dominated by walrus hunting and whaling augmented by the taking and gathering of seal, fish, birds, eggs, seaweeds and roots, greens and berries.

> On the basis of food tastes, the St. Lawrence Islanders could well pre-empt the name 'walrus eaters,' since they live astride one of the richest walrus-hunting areas in the world and for centuries that animal has been the mainstay of their diet. The purpose of the spring hunt is to lay in a supply of several hundred *toohtak*, or 'meatballs,' which are made of long rectangular sections of walrus hide with blubber and some meat still attached, folded over on themselves and then laced together with a thin strip cut from the same skin. These *toohtak*, weighing an average of 110 pounds each, are stored in meat cellars or meat houses for several months before use by both humans and dogs. In 1940 the St. Lawrence people said, in response to the question, 'What do you like best to eat?':

means of h
the advent
the winter

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[47] *Ibid.*
[48] Hughes
[49] *Ibid.*
[50] *Ibid.*

> 'Ever since the people was formed on the island we eat most walrus meat, and we like it best.
>
> But if we got one whale, we forget about walrus meat for a while. But we never get tired of walrus meat. I think because we raised by them.'
>
> And walrus is still the favorite meat food of the Sivokakmeit, although certain parts of the bowhead whale are considered extremely tasty. Walrus is often contrasted to seal meat to illustrate its excellence, and seal is said to be 'too soft,' to spoil too quickly and not be amenable to preservation for as long as walrus. An excerpt from the field notes points up this preference:
>
> Ivan said that when people go out to the hospital 'in two or three days they want our food.' They want walrus. He told me that people here don't want birds or fish -- they want *walrus*. He said, 'It isn't like your soft food; it is hard.' I asked him if it is the Eskimo's 'real food.' Ivan said it is, and then said, 'It's our 'bread.''
>
> The same sentiment is heard over and over -- that '*our* food is walrus.' ....[49]

Just as noted earlier in other regions of Arctic Alaska, the means of hunting have shown technological change and adaptation with the advent of the rifle, the outboard motor, etc., so we no longer see the winter walrus hunting picture of:

> ....the walrus hunter [stalking] over the winter sea ice with his hunting bag hung lightly on his shoulders, his harpoon and coiled walrus-hide rope, his lance and ice tester, and his baleen toboggan for hauling the meat home.[50]

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[47] *Ibid.*
[48] Hughes and Hughes, *op. cit.*
[49] *Ibid.*
[50] *Ibid.*

or the spring picture of:

> ....a boat full of hunters .... silently [paddling] to an ice floe on which a group of walruses were sleeping. Then the striker of the boat .... quietly [jumping] onto the ice and [trying] to kill several of the sleeping animals with lances and knife before the rest slid, alarmed, off into the water.[51]

No, now the rifle and the outboard make the task a bit easier. The means have changed but the end is the same -- food is secured for survival from one of the harshest environments in the world.

Ironically, in walrus hunting the use of the rifle often causes waste as animals are more difficult to retrieve and are frequently lost to the hunters.

Another aspect of the walrus story is told on the land. Despite the use of some ice holes or "stink holes" -- caches dug in the frozen permafrost ground -- villagers of St. Lawrence lose about 50% of their walrus meat supply through spoilage annually.[52] At Savoonga eight-year records of the Alaska Department of Fish and Game indicate an average annual harvest of 385 animals -- 70% taken during the spring hunt. About 135 walrus dressing, an average of 1500 pounds, spoil from a lack of proper freezer-storage facilities, due in turn to many factors, economic and technical, resulting in no village power source. The spoilage of 200,000 pounds of meat represents a dollar loss of $78,000 per year, as well as an indirect, but possibly critical, conservation of the species' loss.

Similarly, the rifle, the motor, cotton, nylon or manila rope have changed hunting methodology in sealing and whaling, causing some differences in the taking success with each species compared with former years.

Whaling at St. Lawrence is similar to that at Little Diomede, Wales, Point Hope, Wainwright or Barrow. The whale is the up to 60 ton bowhead -- and their hunting is the glory of the St. Lawrence Native hunter.

Methods here are the same as along the Arctic coast and the "mangtak" (whale skin) is just as tasty and preferred a food as the muktuk" (whale skin) of the mainland Eskimo.

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[51] *Ibid.*

[52] From University of Alaska descriptive need for environmental energy freezer-storage facility project at Savoonga, St. Lawrence Island.

Although highlighted by the quest for walrus and whale, the St. Lawrence Islander today depends upon a varied seasonal food cycle dictated by the environment.

> A proper starting point might be the fall. In September picking of greens has just about finished, but berry picking begins, as well as the collection of various types of roots and tubers. This continues until the ground becomes too frozen, less than a month later. Bird hunting with guns continues -- particularly for ducks and geese and sea gulls. Walruses are not found in the early fall, nor hair seal; but hunting of spotted seals continues during September and October and then dwindles off during November, when the ice comes. In the months of October and November women and children gather seaweeds of various types from the shores, washed up by the high winds and waves of the fall. In addition, sometimes tomcod are gathered. In former years there was some fishing for cod and sculpin in the fall before the ice came, but that activity has generally disappeared now.
>
> By November many of the species of birds begin to leave the St. Lawrence area. Only the sea gulls linger for a short while before they, too, leave; and the traditional custom was to kill as many of these big birds as possible to freeze for use during the coldest part of winter, January through March. The first sea ice comes in November, and with it -- usually -- the walrus herds journeying southward with the edge of the ice sheet. Often, however, there is a period, between the departure of the spotted seals and birds in November and the coming of the first ice with its burden of walruses later in the month, when there is no real source of animal or bird food available. Sometimes, too, the walrus herds do not come with the ice or are too far out for hunting. At such times in former days there was famine. If there was hunting, however, it was very intense during this time, and one middle-aged man now recalls his youth in the following terms:

'From the first part of the winter there was a good hunting. For seals, and walrus, and everything. They hunt much as they could. Save every part of it -- blubber and meat. Pretty soon, carcasses piled up; and they just take the skin off and leave the blubber on the meat. They leave it like that; store it, never touch it. Because the current is very close in the first part of the season, the winter. The latter part of the winter when the shore ice gets heavy, the sea animals travel way out to where there is loose ice; open leads out farther. For that reason, we try to get all we can; because ahead there lies shortage of meat and oil. For that part they store everything. No, they don't store as much meat now.'

Hunting of walruses, hair seals, and mukluk seals on the winter ice is then the principal activity of men from December through March. This hunting is done either from along the shore, where currents break up the ice, or out on the flat pans themselves, where a man will go with his dog team or alone, walking, or with a boat crew. Even so, the period from January through March is the worst of the year; for not only are there fewer animals, but the hunting conditions are much more dangerous and the weather is extremely severe. Often storms and bad weather last for many days at a time and permit no hunting whatsoever. It becomes a work of fair proportions to maintain a household with light, heat, and water. During this time of the winter some men are occupied with their fox-trapping line and must leave the village daily to attend their traps, or else they stay for extended periods at camps located some distance from the village. The only bird hunting during the winter is for sawbills, or old squaw ducks, which remain throughout the winter along the edge of the shore ice and are hunted by the men and boys when they are not otherwise busy. Sculpin fishing and crabbing begin in January and continue until the ice starts to break up in late May.

In March the sea commences to open once more, and there are more leads. Boat hunting is the only type possible on the ice now, and the walruses become more abundant. In April the whaling season begins, and with it a period of intensive hunting for about two months. During

April and May the great bulk of food supply for the entire year must be laid away. Supplementary hunting activities during the rest of the year contribute, of course, to the nurture of the community; but without an abundant hunt during April and May food scarcity or even famine will be a possibility throughout the year. This is what happened in the spring of 1954, and it was only slightly better during 1955. It has occurred several times since 1940.

With the whaling, the killing of walruses and mukluks and hair seals goes on as well. And by late May and particularly early June, the birds are returning in great numbers. Auklets, murres, cormorants, puffins, geese, loons, and gulls all come back to their native rocks.

June sees the end of walrus and hair-seal hunting and of whaling. The main herds of walruses have passed to the north, but some of the males remain in the ice near Savoonga for part of the month. By the last days of June, however, they too have swum after the retreating ice. Only occasionally is a gray whale killed in the summer. June brings a harvest of seaweeds as well as birds, and picking some of the greens begins as well. In the latter part of the month boats travel to cliffs forty miles south of the village to gather murre and cormorant eggs by the tubful.

June is also the month for preparing the spring's catch of meat for storage in the meat cellar (*siklowaek*), or meat house. Walrus meat has already been rolled into 'meatballs' (*tochtak*) and put away. Now baby walruses and mukluks are cut into strips and hung on racks to dry in the summer sun, along with orderly rows of eviscerated birds and fish. The meat dries all summer unless eaten first, and then the dried meat (*nafkoraek*) is taken down in the early fall and stored. As noted before, in 1940 much of the stored meat was placed in barrels or pokes of seal oil, but in 1955 very little was preserved in this manner. During the latter year perhaps the general scarcity of meat precluded storing very much of it, but nonetheless the pattern of preserving meat in seal oil is very clearly passing out of the culture. I will examine some of the reasons for this change later, in connection with the sentiments about using seal oil which the Eskimos have acquired by their contact with white people.

> In July the picking of greens begins in earnest, and hunting spotted seals in the lagoons of the island is a principal activity of the men. Netting of auklets now starts also, and it continues for a period of only a few weeks. Duck, geese, and puffin hunting with shotguns is another subsistence activity occurring during the summer, and some netting of fish takes place. The months of July and August are essentially the same as far as subsistence activities are concerned. With the browning of the September grasses a new phase begins, and the yearly cycle once more is repeated. ....[53]

FIGURE III - 41

SUBSISTENCE PRODUCTS GATHERED BY SEASON
ST. LAWRENCE ISLAND

Product	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Walrus, mukluk, hair seal	X	X	X	X	X						X	X
Whale				X	X							
Spotted seal						X	X	X	X	X	X	
Roots, greens, berries						X	X	X	X			
Seaweeds						X	X	X	X	X	X	
Fish	X	X	X	X		X			X	X	X	
Birds	X	X	X	X	X	X	X	X	X	X	X	X
Eggs						X	X					

Source: Hughes, Charles Campbell and Hughes, Jane Murphy. *An Eskimo Village in the Modern World.* Ithaca, New York: Cornell University Press, 1962.

In this pattern somewhat augmented by the semi-wild reindeer of the island, the people fully use the biotic resource of all of the island and the sea around.

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[53] Hughes and Hughes, *op. cit.*

SOUTHWEST COASTAL LOWLAND REGION

Ethnic Settlement Patterns

Change in land surface and land and water juxtaposition, in turn affecting the biotic community and man's access to its use and harvest, has always been a fundamental factor in the settlement patterns of the Yukon-Kuskokwim delta Eskimo. It is perhaps the most important factor--transcending the intrusion of other Native ethnic groups, foreign invaders and church and state. Much of this has been caused by the building of the Yukon River delta causing channel changes, accretion in one place and erosion in another. The process is constant and the change is constant. Similarly, but for different reasons, change is constant along the lower Kuskokwim. Here subsidence rather than building occurs as the river deepens, lengthens and widens the marine estuary that is a drowned river mouth. During the past winter of 1968 many of the people of Kwigillingok moved to nearby Kongiganak because of subsidence in the former place, and thus, settlement places have changed for these reasons in this region since before recorded time.

Before change there had to be origin, but the pre-history of the Yukon-Kuskokwim delta Eskimos is a confusing haze. Recorded history of the area is itself very brief; attention by ethnographers and anthropologists must be regarded as slight despite investigations since the 1930's. Before recorded history there are only traditional tales to go by. It is enough for the Eskimo that he is there and always has been. It must also be enough for scholar or statesman--anyone--today, who is attempting to find out the facts about this region and its people and weigh their importance.

Originally, and still today, ethnic-linguistic division of the Yukon-Kuskokwim Eskimo separated the people within the region into seven sub-groups--five environmentally associated with the delta, one peripherally along the coast to the south, and one on Nunivak Island. These are:

... *Chnagmiut:* People of the lower Yukon Delta and shore of Pastol Bay;

... *Ikogmiut:* Along both banks of the Yukon above the Chnagmiut territory to the territory of mixed Ingalik Eskimo occupation about and above Holy Cross;

... *Magemiut:* Through the delta lake country from Cape Romanzof almost to the Yukon;

... *Nunivagmiut:* On Nunivak Island and at Cape Vancouver on Nelson Island;

- ... *Kaialigmiut:* Along the Bering Sea coast, south of Cape Romanzof to Cape Avinof, including Baird Inlet and Nelson Island;
- ... *Kuskwogmiut:* Along the shores of Kuskokwim Bay and banks of the Kuskokwim River inland to the area of transition with the Ingalik just east of Anvik and southeast to the Ahklun Mountains and Goodnews Bay;
- ... *Chingigmiut:* In the region of Cape Newenham and Cape Pierce.

While all these ethnic sub-groups speak the Yupik dialect, each has distinguishing and identifying characteristics.

Pertinent historic contact with the region may be dated from 1840-1842 (despite partial contact for the previous twenty years) when Russian administration was achieved by Kolmakov, and the explorer Zagoskin wrote his early detailed accounts of geography and ethnography.

At this time the Eskimo and Ingalik were already living in general compatibility along the Yukon and Kuskokwim River reaches above the delta.

The Russians brought with them the first influences upon the Native settlement patterns which were not environmentally related. These influences were Christianity and the establishment of permanent trading centers.

In addition to comprehending several difficult concepts foreign to aboriginal beliefs, the Russian Orthodox system insisted upon adherance to a rigid calendar of ceremonial activity. The Russian trading centers introduced local exchange and technological advances obviously beneficial in many ways to the Eskimo. As a result, minor population shifts resulted and Native villages in the general vicinity moved and were established at, near or adjacent to religious and trade activity centers.

For example, a Native village was established just above Andreafsky's Redoubt on the Yukon, and a succession of villages over a period of time came into existence around Holy Cross.

The purchase of Alaska in 1867 only briefly disrupted the commercial and religious impact upon Native settlement patterns in the region. The companies changed and Protestantism was introduced. Domination of foreign cultural ways continued to exert its influence, but the effect of this influence was relatively minor.

Despite the Russian effect and the successor influences such as Sheldon Jackson and the establishment of the Moravian Mission at Mumtrekhlogamute in 1885--later to be called Bethel--change in Native settlement patterns within the region was really insignificant until the Twentieth Century and, indeed, the later advent of public medical and educational opportunity essentially after World War II.

That such opportunity was late is attested to by the following record. That it was also intermittent is also to be noted.

... Only one place in the region has had continuous school administration since before 1900. This is the Catholic Church school at Holy Cross, established in 1888. It continued as a boarding school until 1958-1959 when it became a day school.

... Bethel has had generally continuous schooling opportunity since 1885 but direction has been interrupted. A Moravian Mission school was established in 1885; it was succeeded by a Bureau of Education/Bureau of Indian Affairs school in 1933 and by a territorial (later state) school in 1947.

... The Catholic Church's school, St. Mary's, was established at Akulurak in 1899 or 1900 but was not successful because of resistence of Native leaders and shamans to the religious teachings. After an epidemic in 1904 when many children were orphaned, the Ursuline sisters went back in and began with an enrollment of fifteen or sixteen. By 1933 the enrollment had increased to nearly 150, and the whole establishment was moved to the present site at Andreafsky (Pitkas Point) in 1951.

... Five village places had schools established between 1901 and 1910--two have been continuous to date, two intermittent in operation, and one discontinued.

... Eight places had schools established between 1921 and 1930--four have been continuous to date, two intermittent in operation, and two discontinued.

... Three places had schools established between 1931 and 1940--all have been in continuous operation to date.

FIGURE III - 42

HISTORIC NATIVE PLACES AND CURRENT STATUS

SOUTHWEST COASTAL LOWLAND REGION

NATIVE GROUP	HISTORIC PLACES	EXISTING 25 - 299	SETTLEMENT 300 - 999	POPULATIONS 1000 +	STATUS UNKNOWN	SEASONAL CAMP SITE	ABANDONED	ANTIQUITY SITE
Chnagmiut	Inhabited the shore of Pastol Bay, in the Yukon Delta, and on both banks of the Yukon River as far as Razboinski. Their settlements were:							
	Aiachagiuk (or Ayachaghayuk), a former village reported in 1898, located on the right bank of the Yukon near the head of the delta. Location unknown.				X			
	Aimqua, near the mouth of the Yukon, a former village recorded on an 1850 map. Location unknown.				X			
	Alakanuk, present place at east entrance to Alakanuk Pass, six miles southwest of Kwiguk; reported in 1899 by Putnam.		X					
	Alexeief, in the Yukon Delta. Location unknown. Var. Alexeiev or Odinotchka. Small settlement and trading post, now abandoned. First reported in 1878.				X			
	Andrzafsky on the north bank of the Yukon above a former Russian redoubt of that name. Established in 1898 as a supply depot, it is present-day St. Mary's.	X						
	Ankachak (same as Kenunimik), on the right bank of the lower Yukon near Pilot Point. Former village or camp reported on an 1850 map; population in 1890 - 103. At or near present-day Pilot Station.	X						
	Apoon (or Aphoon), on Apoon Pass at the northern mouth of the Yukon River, south of Pastol Bay, 50 miles southwest of St. Michael. Small settlement or camp and trading post mentioned in 1907. Location unknown.				X			
	Azachavak, at or near present-day Mountain Village on left bank of Yukon River. Reported in 1899.		X					
	Ariswaniski, on the right bank of the lower Yukon near Pilot Station. Former camp or settlement reported in 1899. Location unknown.				X			
	Aynulik, Yukon district. Former camp or settlement. Population in 1890 - 30. Location unknown.				X			
	Chatinak, near the mouth of the Yukon. Var. Catinakh. Former village. Population in 1880 - 40. Location unknown.				X			
	Chefoklak (or Chifukluk) on left bank of the Yukon at head of its Delta. Settlement or camp reported in 1878. Location unknown.				X			
	Claikehak, on the north bank of the Yukon above Tlatek. Location unknown.				X			
	Fetkina, on the north arm of the Yukon Delta. Bill Moore's Slough.					X		
	Kashutuk, on an island in the Yukon Delta. Var. Kachutuk or Kazhotak. Location unknown.				X			
	Komarof, on the north bank of the Yukon. Former camp or settlement reported in 1878. Population in 1880 - 13.						X	
	Kotlik (or Kotlic), on east bank of Kotlik River, 3 miles south of Apoon Pass. Population in 1880 - 10. Present place.	X						
	Kusilvak, on Kusilvak Island at mouth of the Yukon River. Reported in 1880. Location unknown.				X			
	Kwikloakok, six miles west of Pitkas Point. Reported by Putnam in 1899.					X		
	Migiklik, at the head of the Yukon Delta at junction of Andreafsky and Yukon Rivers. Former village or camp reported in 1850. At or near present-day Pitkas Point.	X						
	Minvok, near the Yukon Delta on right bank of Manvaranak Slough near its mouth on Kwikpak Pass, 18 miles east of Kwiguk. Var. New Hamilton, Manvaranok. Reported in 1842.					X		
	Mikrot, on Norton Sound, 2.2 miles northeast of Point Romanof and 29 miles southwest of St. Michael. Var. Azachagyamut. Former village reported in 1898.					X		

NATIVE GROUP	HISTORIC PLACES	EXISTING SETTLEMENT POPULATIONS 25 - 299	300 - 999	1000 +	STATUS UNKNOWN	SEASONAL CAMP SITE	ABANDONED	ANTIQUITY SITE
Chnagmiut (Contd)	Kobolunuk (or Cobolunuk), 7.7 miles northwest of Pitkas Point. Reported by Putnam in 1899.					X		
	Onuganuk, on Yukon Delta, at mouth of Kwikluak Pass. Former village reported in 1870. Location unknown.				X			
	Pastoliak, on right bank of Pastolik River a few miles north of Pastolik on Pastol Bay. Former village or camp reported in 1849. Present-day Pastolik is a few miles south on the Pastolik River. Population in 1890 - 113.					X		
	Kinegnagamiut (or Razboinski) on the right bank of the Yukon near the head of the delta. Population in 1890 - 92. Near Pilot Village.					X		
	Takshak, on point of land between Five Day and Poltes Sloughs, six miles northwest of Marshall. Village reported in 1842.					X		
	Kazhutak on left bank of Yukon, 48 miles southeast of Khiguk. Reported by Putnam in 1899.					X		
	Tiatiuk, on Yukon-Kuskokwim Delta north of Black River (62°25'N, 165°15'W). Var. Tee-atee-ogemut. Former village reported in 1870.						X	
	Tlatek (var. Tlatekamute), on right bank of Yukon River, 35 miles above Andreafsky. Former village or camp reported in 1869.				X			
	Chaniliut, on Chaniliut Slough, two miles southeast of Pastol Bay. Var. reported as actually Nakhliwak is a separate place one mile east. Reported in 1899.	less						
	Kwikpak (or Kwikpakamiut), on north bank of Kwikpak Pass. Reported in 1879.					X		
	Nokogamiut, on east wash of Nokogamiut Island near mouth of Kawanak Pass. Var. Nokok. Reported in 1899.					X		
	Tuchiak, on left bank of Kawanak Pass. Var. Ttieguzhak. Summer camp reported in 1832.					X		
	Aungnamut, on right bank of Apoon Pass. Var. Old Fort Hamilton. Trading post in 1897 established by North American Transportation & Trading Co. Present-day Hamilton.	X						
	Kavaksarak, on east bank of Kwikpak Pass: reported in 1899.					X		
	Kwiguk, on left bank of Kwiguk Pass. Var. Emmonak (present place). Reported in 1899.		X					
	Waklarok, on south shore of Kwemeluk Pass, 17 miles northeast of Black. Reported by Putnam in 1899.						X	
	Ingrakaklak, on west coast of Tin Can Point, 13 miles southwest of Kwiguk. First reported in 1898.						X	
	Agaklarok, on Tin Can Point, Yukon Delta. Var. Agcklarok. First reported in 1899.						X	
	Kwiklokchun, on left bank of Kwikluak Pass, Yukon Delta. Reported in 1899.					X		
	Kwikluak, south bank of Kwikluak Pass, Yukon Delta. Reported in 1832.					X		
	Kanegklik (or Kanelik) on east bank of Kanelik Pass, Yukon Delta. Reported in 1899.					X		
	Trogshak, on Kwimlilthla Slough, Yukon Delta. Village or camp reported in 1899.					X		
	Tukukapak, on east bank of Akularak Pass. Var. Tukikapak. Small settlement of three families in 1950. Originally reported in 1899.					X		
	Narosigagmiut, on south bank of Kwemeluk Pass, Yukon Delta. Var. Narosigak or Nagosakchowik. Former village reported in 1899.					X		
	Mukialik, left bank of Yukon, six miles west of Mountain Village. Eskimo camp reported in 1899.					X		
	Eleutak, on left bank of Kwemeluk Pass, 3.3 miles south of Sheldon Point. Reported in 1899.					X		
	Chakaktolik, on banks of Kashunuk Creek, 52 miles west of Marshall. People recently left as permanent place.					X		

NATIVE GROUP	HISTORIC PLACES	EXISTING SETTLEMENT POPULATIONS			STATUS UNKNOWN	SEASONAL CAMP SITE	ABANDONED	ANTIQUITY SITE
		25 - 299	300 - 999	1000 +				
Ikogmiut	Inhabited both banks of the Yukon River from the territory of the Chnagmiut as far inland as Makak and probably Fox Island. Their settlements were:							
	Asko, on Yukon River southeast of Anvik, right bank of river, near mouth of Walker's Slough. Var. Koserefski, present-day Holy Cross. Koserefsky or Kozherevsky was the old village. The "new" village (Holy Cross) was first reported in 1842.	X						
	Bazhi, on left bank of the Yukon at mouth of Innoko River. Former camp or settlement reported in 1861.						X	
	Ignok, on right bank of the Yukon near present day Holy Cross. Former village reported in 1869.						X	
	Ikatlek, on the right bank of the Yukon between Paimiut and Ingregamiut. Reported in 1879. Location not known.				X			
	Ikogmiut (or present-day Russian Mission), on the Yukon River near its southernmost bend, reported in 1842. Population in 1880 - 143.	X						
	Ikuak, on north bank of Yukon, 14 miles southwest of Russian Mission. Var. Akahamut. Reported in 1842. (61°37'30"N, 161°39'20"W).					X		
	Ohogamiut (also known as Ikuak and E-ko-go-mute), on right bank of Yukon, 22 miles southeast of Marshall. Reported in 1916. Presently occupied.	less						
	Ingrakak, on the right bank of the Yukon. Var. Ingrihak. Reported in 1880.					X		
	Khaik, on the northern bank of the Yukon River nearly opposite Koserefsky. Given once as Claikehak. Probably part of Holy Cross or series of villages that have existed in this area.						X	
	Kikhakat, on the north bank of the Yukon near Ikogmiut, two miles above Akhamut. Former camp or settlement reported in 1850.						X	
	Koko, on north bank of the Yukon below Ikogmiut. Var. Kakamut. Reported in 1869.					X		
	Kuyikanuikoul, on the right bank of the Yukon below Holy Cross. Reported in 1869. Location unknown.						X	
	Kvikak (formerly Kaiyhkhotana--Koserefski), on Yukon River 30 miles above Anvik.						X	
	Makak, on the right bank of the Yukon below Anvik. Also Bonasila or present-day Paradise. Reported in 1861. Population in 1880 - 121.	less						
	Mukluak, on south bank of Yukon River, south of Hills Island, Yukon-Kuskokwim Delta. Former village reported in 1844. Opposite Ikogmiut Mission.						X	
	Munaikak (or Ukak), on Yukon opposite Koserefsky (Holy Cross). Reported in 1869.						X	
	Nunaktak, on right bank of the Yukon, about 50 miles above Anvik. Former camp or village reported in 1878.						X	
	Paimiut, on the southern bank of the Yukon above Ikogmiut (four locations), first reported in 1830. Moved during various seasons.					X		
	Pogoreshapka, on the right bank of the Yukon about 20 miles below Holy Cross. Var. Degorashapka, Gagara-Shapka. Population in 1880 - 121. Location unknown.				X			
	Ribnaia or Rubnaia, on the right bank of the Yukon above Ikogmiut. Var. Ingregamiut. Population in 1880 - 40. Near upstream mouth of Tuckers Slough, 27 miles northeast of Russian Mission. (Var. given as Mountain Village.)						X	
	Uglovaia, on right bank of Yukon between Ikogmiut and Razboinski, at or near present-day Marshall. Var. Ooglovia, Ouglovaia, Sabotnisky, Uglivia. Population in 1880 - 102.	X						
	Chinik, on south bank of Yukon River, near Yukon-Kuskokwim portage. Var. Odinochka Chinik or Tchinik. First reported in 1850.						X	
	Ikaligvigmiut, on north bank of the Yukon, 11.5 miles northeast of Russian Mission. Reported in 1842. Present-day locality of Dogfish Village.						X	
	Toklik or Tochtlik, on north bank of the Yukon, 16 miles southwest of Russian Mission. Reported as village in 1916.					X		

NATIVE GROUP	HISTORIC PLACES	EXISTING SETTLEMENT POPULATIONS 25 - 299	300 - 999	1000 +	STATUS UNKNOWN	SEASONAL CAMP SITE	ABANDONED	ANTIQUITY SITE
Magemiut	Inhabited the lake country of Alaska from Cape Romanzof almost to the Yukon River. Their settlements were:							
	Gilak, near Cape Romanzof. Population in 1890 - 22.					X		
	Kipniak, at the mouth of the southern arm of the Yukon River, south bank of Black River. Reported in 1896 as a fish camp. Present-day Black.					X		
	Kwakpak (or Queakhpaghamiut), in the tundra south of Yukon Delta. Reported in 1890. Location unknown.				X			
	Manvogaloklak, on one of the lakes connected with Kvichivak River. Former village or camp. Population in 1880 - 10. Location unknown.						X	
	Munachuk, in the Big Lake region. Former village or camp. Population in 1880 - 40. Population in 1950 - 44; people probably now in Nunapitchuk or Kasigluk, present places near Bethel.						X	
	Tefaknak, south of the Yukon River, Yukon-Kuskokwim Delta. Former village. Population in 1890 - 195. Location unknown.				X			
	Tienoak, on Kvichavak River. Var. Tiengaghamiut. Former village; population in 1890 - 60. Location unknown.				X			
	Bimiut, on the Bering Sea Coast 1[illegible] miles southwest of Kipriak. Eskimo village or camp reported in 1899.					X		
	Mariak, at foot of Askinuk Mountains, on left bank of Kun River. Present-day Scammon Bay.	X						
	Kutmiut, on left bank of the Kun River, 2.7 miles east of Scammon Bay. Reported in 1870.						X	
	Chukwaktoligamute, on north shore of Aropuk Lake. Var. Chakwaktolik, Shoktak. First reported in 1897. Small existing place.	less						
Munivagmiut	Their territories covered the greater part of Nunivak Island and a small district about Cape Vancouver on Nelson Island. Their settlements were;							
	Chulik, on east side of Nunivak Island. In 1880 comprised two villages called Chuligmiut and Upper Chuligmiut. Population in 1890 - 62. Location unknown.						X	
	Inger (or Ingrimiut), on Nunivak Island. Former village - name meaning "mountain people." Population in 1890 - 35.					X		
	Kaliukluk, south of Cape Vancouver on Nelson Island; reported in 1878 as Kalikhlogamute.						X	
	Koot, near Cape Etolin on Nunivak Island. Reported in 1907 as the largest village of the Nunivagmiut people. Near present Mekoryok.		X					
	Kwik (or Kwigamiut) on the southern shore of Nunivak Island. Population in 1890 - 43.					X		
	Tanunak, near Cape Vancouver, Nelson Island. Reported in 1878; population in 1890 - 48. Roman Catholic mission here in 1891.	X						
	Kigoumiut, on north coast of Nunivak Island, west of Iloodak Point.					X		
	Tachyhuimiut, on west shore of Dahloongamiut Lagoon, Nunivak Island. Present-day fish camp.					X		
	Tachiknoa, fish camp on west shore of Nunivak Island. Location unknown.					X (probably)		
	Nash Harbor, village on southwest shore of Nash Harbor, 32 miles southwest of Cape Etolin on Nunivak Island.					X		
	Duchikmiut. Abandoned village. Presently one of the most important fishing sites. Tent camps occupied in summer. One barabara used as hunting camp in winter. Also camp sites on other rivers entering Duchikthluk Bay.					X		
	Nakooytoolekmiut. Abandoned. Present-day fishing and hunting site. Two barabaras.					X		
Kaialigmiut	Their territories were north of the Kuskwogmiut, between Kuguktik River and Cape Romanzof and on Nelson Island. Their settlements were;							
	Agiukchuk, opposite the southern shore of Nelson Island. Population in 1880 - 35; in 1939 - 65. Presently a fish camp referred to as Monrak which is adjacent.					X		

NATIVE GROUP	HISTORIC PLACES	EXISTING SETTLEMENT POPULATIONS 25 - 299	300 - 999	1000 +	STATUS UNKNOWN	SEASONAL CAMP SITE	ABANDONED	ANTIQUITY SITE
Kaialigmiut (Contd)	Anogok, on the northwest shore of Kuskokwim Bay, 12 miles southeast of Kinak Bay, 8 miles south of Kipnuk, Yukon-Kuskokwim Delta. Summer camp first reported in 1882.					X		
	Asiknuk, on Hooper Bay near Cape Romanzof. Reported in 1878. Population in 1880 - 175. Present-day Hooper Bay.		X					
	Chichinak, on bank of small river flowing into Etolin Strait. Var. Cheaching, Chechinamiut, Chichinagamiut, Chichinagamute. Reported in 1878; population in 1880 - 6; in 1890 - 84.						X	
	Kaialik, in the Yukon Delta. Var. Kaialigumiut, Kailwigamiut, Kialigamiut. Former camp or settlement reported in 1878. Population in 1880 - 100; in 1890 - 157. Location unknown.				X			
	Chalit, on left bank of Kuguklik River, 6 miles northeast of Kipunk, Yukon-Kuskokwim Delta. Reported in 1878; population in 1880 - 54.						X	
	Igiavarok (Igiak), inland from Scammon Bay and near Magemiut territory. Thirty miles northeast of Hooper Bay. Reported in 1878.						X	
	Kashigalak, in the center of Nelson Island. Reported in 1878; population in 1880 - 10. Location unknown.						X	
	NOTE: Village of Kipnuk on left bank of Kuguklik River may be of 19th century tie, but not referenced until 1937 by BIA. Population in 1940 - 144; in 1950 - 185.							
	Kashunuk[8], near the Kashunuk outlet of the Yukon River. Var. Kashunahmiut, Kashunok, Old Kashunuk Village. Reported in 1878 as 20 houses and a population of 100 to 200. Population in 1880 - 125; in 1890 - 232. Huts and ruins still remain; the triangulation station Kashu is located here.						X	
	Kinak, on mainland east of Nunivak Island, Yukon-Kuskokwim Delta. Var. Kenachananak, Kennachananaghmiut. Population in 1890 - 181.						X	
	Kuskunuk, on Hooper Bay in the Yukon-Kuskokwim Delta. Former camp reported in 1899. Location unknown.						X	
	Kvigatluk, east of Kyigayalik Lake, 26 miles northwest of Bethel in the Yukon-Kuskokwim Delta. Var. Kvigathlogamute. Village or camp reported in 1879.						X	
	Nuloktolok, on south part of Nelson Island between Baird Inlet and Bering Sea. Var. Nulakhtolagamute, Nuloktolgamute, Nulukhtulogumut. Former village or camp reported in 1878. Population in 1880 - 25. Location unknown.						X	
	Nunvogulukhluguk, in the Big Lake region, Yukon-Kuskokwim Delta. Village or camp reported in 1879.						X	
	Sfaganuk, 13 miles north of Chefornak and 88 miles southwest of Bethel between Dall Lake and Etolin Strait in the Yukon-Kuskokwim Delta. Var. Sfoganugamiut, Staganuk. Reported in 1878.						X	
	Ookagamiut (or Ukak) on Nelson Island. Reported in 1878; population in 1880 - 25.					X		
	Oonakagmute (or Unakak), on Ninguluk River. Eskimo settlement with 1880 population of 20. Location unknown.				X			
	Tellamishuk (archaeological site), five miles north of Hooper Bay.							X
	Chukchuk (or Chakchak) on left bank of Chukchuk Creek on Nelson Island, 5.5 miles west of Baird Inlet.					X		
	Kinegnagamiut, near Chefornak.						X	
Kuskwogmiut	Occupying the shores of Kuskokwim Bay and the banks of the Kuskokwim River as far inland as Kolmakof. Their settlements were:							
	Agomekelenanak, in the Kuskokwim district. Population in 1890 - 15. Location unknown.				X			
	Agulakpak, near the Kuskokwim River; population in 1890 - 19. Location unknown.						X	
	Arolic or Aguliak, on the shore of the Kuskokwim Bay at the north mouth of Arolic River, 43 miles north of Goodnews; formerly Aguliagamute. Population in 1880 - 120.					X		
	Agumak, in Kuskokwim District; population in 1890 - 14. Location unknown.				X			

ANTIQUITY SITE	NATIVE GROUP	HISTORIC PLACES	EXISTING SETTLEMENT POPULATIONS 25 - 299	300 - 999	1000 +	STATUS UNKNOWN	SEASONAL CAMP SITE	ABANDONED	ANTIQUITY SITE
	Kuskwogmiut (Contd)	Akiachak, on the Kuskokwim River (present place). On right bank of the river, 13 miles northeast of Bethel. Cited in 1890 as Akiakchagamiut with a population of 43; population in 1900 - 165.	X						
		Akiak, present place, on the right bank of the Kuskokwim River, 20 miles northeast of Bethel. Population in 1880 - 175. ("Crossing over place" to Yukon.) Population in 1939 - 209.	X						
		Aklut, on the Kuskokwim River at the mouth of the Eek River. Population in 1880 - 162. Formerly Ahguliagamiut. Present-day Eek near this site.	X				X		
		Akmiut, on the Kuskokwim River 10 miles above Kolmakof at mouth of Holokuk River. Var. Akmute. Former village. Also given as a Taiyanyanokhotana (Koyukon) village, perhaps Eskimoized in later times.					X		
		Apahiachak, location uncertain; probably near Bethel. Var. Apahiachamiut. Population in 1890 - 91.						X	
		Apokak, near the mouth of the Kuskokwim River at the mouth of Apokak Slough, Eek Channel. Reported in 1878; population in 1880 - 94; in 1890 - 210. Reported abandoned in 1949.						X	
		Atchaluk (Atchalugmiut)[b], location unknown. Population in 1880 - 39.						X	
		Mumtrekhlogamute, present-day Bethel. Population in 1880 - 41. In 1885 Moravian Mission established at present place.			X				
		Chimekliak or Chimiak, on left bank of Kuskokwim River one mile northeast of Beacon Point, 50 miles southwest of Bethel. Population of Chimiagamute reported in 1880 as 71.						X	
		Chuarlitilik, on right bank of the Kanektok River, nine miles west of Amakatatee Creek, 64 miles northeast of Goodnews. Eskimo village in 1898 now abandoned.						X	
		Etoluk, location unknown. Var. Etohugamiut. Population in 1890 - 25.						X	
		Igiakchak, location unknown. Var. Tgiakchaghamuit. Population in 1890 - 81.						X	
		Ikalikhtuli (var. Little Mountain Village). Zagoskin reported Eskimo village or camp here in 1842-44. May be same as Ekaluktaluk, location uncertain. Population in 1890 - 24.						X	
		Iliutak, on east shore of Kuskokwim Bay. Var. Tliutagumute. Reported in 1869; population in 1880 - 40.				X			
		Kahmiut, location unknown. Population in 1880 - 40.				X			
		Kakuiak, on the Kuskokwim River. Location unknown. Var. Kakhuiyagamute. Population in 1880 - 8.				X			
		Kaltshak (or Kalskag - present-day place), on the right bank of the Kuskokwim River, original village four miles southwest of present Kalskag. Listed as Kaltkhagamute in 1880 - population 106.	X						
		Kakuktuk, location unknown in this district. Var. Kahlukhtugamiut. Population in 1890 - 29.				X			
		Kamegli (or Kameglimiut) on the right bank of the Kuskokwim River 10 miles above Bethel. Reported in 1898.	(occupied by one family)						
		Kanagak, location unknown. Population in 1890 - 35.				X			
X		Kanak, location unknown. Population in 1890 - 14.				X			
		Kiktak, on an island in the Kuskokwim River, 20 miles northeast above Bethel. Eskimo settlement now abandoned. Reported in 1878. Population in 1880 - 232.					X		
		Kinak, on the north bank of the Kuskokwim River, 4 miles east of Tuntuliak and 40 miles southwest of Bethel. Reported in 1879. Population in 1880 - 60; in 1890 - 257.					X		
		Klchakuk, on the east side of the entrance to Kuskokwim Bay north of Goodnews Bay. Var. Klahangamut. Population in 1880 - 18.					X		
		Kleguchek, on the right bank of the Kuskokwim River at its mouth, 3 miles southwest of Helmick Point and 45 miles southwest of Bethel. Reported in 1898 as Klegutshegamut.						X	
		Klutak, location unknown, possibly near Klutak Creek, 52 miles south of Bethel.						X	

NATIVE GROUP	HISTORIC PLACES	EXISTING SETTLEMENT POPULATIONS			STATUS UNKNOWN	SEASONAL CAMP SITE	ABANDONED	ANTIQUITY SITE
		25 - 299	300 - 999	1000 +				
Kuskwogmiut (Contd)	Kolmakof, a Moravian mission consisting of Eskimo mixed with Athapascans, 200 miles from the mouth of the Kuskokwim River, 21 miles east of Anvik. Called Lukin in 1832; Russian post destroyed by fire in 1841; 1885 Moravian mission. Eskimo settlement of Kvigym Painagmute here originally.						X	
	Kongiganak, present place near the entrance to Kuskokwim Bay on the west shore 14 miles southwest of Kulvagavik, 34 miles southwest of Quinnagak, reported in 1878. People of Kwigillingok presently in process of moving to this place.	X						
	Kuikluk,[c] on the left bank of Kuskokwim River, perhaps identical with a town given as Quieclohchamiut or Quiechochlogamiut. The existing site of Kwethluk is 11 miles east of Bethel. Population in 1880 - 75. Eskimo village mentioned by Eakin (1914, pl. 1), USGS, who spelled it "Kwiklak." The spelling evolved to "Quithlook" in 1923 and to "Kwethluk" in 1932. Its population was 186 in 1939 and 242 in 1950. The Kwethluk post office was established in 1947. This may be the same village reported in 1879 by E.W. Nelson, U.S. Signal Service, as "Kuilkhlogamute," or "Kuilkhlok people." In the 1880 U.S. Census Ivan Petroff used Nelson's spelling on his map but spelled it "Kuljkhlugamute" in the text. In 1880 the population of the village was 75.		X					
	Kukluktuk, on the left bank of the Kuskokwim River 30 miles below Kolmakof. Location unknown and no references available.				X			
	Kulvagavik, on the west shore of Kuskokwim Bay, 24 miles west of Quinhagak. Reported in 1879; population in 1880 10. USGS recently reported two buildings.					X		
	Kuskovak (or Kuskak), on right bank of the Kuskokwim, located six miles southwest of Eek Island, 53 miles southwest of Bethel; reported in 1879.						X	
	Kweleluk, on a small river in the tundra north of Kuskokwim Bay (location unknown). Var. Quelochamiut. Population in 1890 - 112.				X			
	Kwik, on the right bank of the Kuskokwim River, 7 miles northeast above Bethel. Small settlement now nearly abandoned. Population in 1880 - 215 -- listed as Kwigamute.	less						
	Kwikak, on upper Kuskokwim River (or Kwigalok) between Tuluksak and Tuklak; exact location unknown, but 40 miles northeast of Bethel, called Kwigalogmute on right bank. Population in 1880 - 314. The 1890 census lists the place on the left bank as Quiechlochlogumiut, population 65. May be same as 1861 Russian reference Kviguglyugmyut.					In an area of several seasonal camps.		
	Kwilokuk, location unknown; former village or camp called Quilochugumiut. Population in 1890 - 12.				X			
	Kwinak, on the east side of Kuskokwim River near its mouth. Var. Quinhagak. Present place reported in 1826 as Koingak. Population in 1880 - 83 as Quinehahamute. Present place of Quinhagak.		X					
	Lomavik, on the left bank of the Kuskokwim River, 14 miles southwest of Bethel, now abandoned. Population in 1880 - 81.						X	
	Mumtrak, on Goodnews Bay, 0.2 mile southeast of Goodnews. Reported in 1880 with population of 162. Abandoned and in 1930 people moved to Goodnews. Now Goodnews Bay.	X						
	Kwigillinogok (present place), west shore of Kuskokwim Bay, 17 miles southwest of Kulvagavik, 37 miles southwest of Kwinhagak. Reported by Governor of Alaska report, 1927, as Quillingok. People now moving to Kongiganak.		X					
	Nakolvakik (or Nakolkavik), on left bank of Kuskokwim River near the mouth. REported in 1878. Population in 1880 - 193. Location unknown.						X	
	Napai, mixed with Athapascans, on the bank of the Kuskokwim River a little above Kolmakof. Var. Napaimiut. Twenty-eight miles east of Anvik. Population in 1880 - 60; in 1930 - 11.					X		
	Napaiskak, on the left bank of Kuskokwim River, 6 miles south of Bethel. Reported as Napasiak in 1867; reported as Napaskiagamute by Petroff's 1880 Census, population 196. Present place Napaskiak.	X						
	Napakiak, on the right bank of Kuskokwim River, 14 miles southwest of Bethel. Reported in 1878 as Napahaiagamute. Population in 1880 - 98.	X						

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[a] Up the Kashunuk Slough is the site of "Old Chevak." There is no reference for its presence in the 19th Century. The people of Kashunuk moved to Old Chevak and then in 1950 when Old Chevak was abandoned moved to Chevak. This is a typical pattern in the history of this region.

[b] This place may still be used seasonally since the word means "place where there is salmon berries."

[c] A good example of the "name" problem.

NATIVE GROUP	HISTORIC PLACES	EXISTING SETTLEMENT POPULATIONS 25 - 299	300 - 999	1000 +	STATUS UNKNOWN	SEASONAL CAMP SITE	ABANDONED	ANTIQUITY SITE
Kuskwogmiut (Contd)	Nochak, on Chilitna or Holitna River, location unknown. Var. Nohchamiut. Summer camp or village reported in 1890 - population - 28.				X			
	Novotoklak, location unknown. Var. Novoktolak. Population in 1890 - 55.				X			
	Nanvarnarluk, occupied until 1920's; people now in Nunapitchuk.						X	
	Okaganak, on the south bank of Kuskokwim River. Appears to be across the river from Oknagak.					X		
	Oknagak, on the north bank of the Kuskokwim River, 1.8 miles west of Aniak. Var. Oknagamut. Reported by Zagoskin in 1842-44, by Nelson in 1879, and by Petroff in 1880 with a population of 130.					X		
	Oyak, on the east shore of Kuskokwim Bay, just north of the mouth of Kanektok River at mouth of Oyak Creek. Reported in 1898. A former village.					X		
	Papka, on north shore of Kuskokwim Bay, 10 miles southwest of Eek Island, 57 miles southwest of Bethel. Var. Papkamut. Reported in 1898. A former village.						X	
	Popokamiut, 2 miles north of Papka. Village reported in 1914.						X	
	Shevenak, on the left bank of the Kuskokwim River, at or near Eek Point. Var. Shevenagamute. Reported in 1878. Population in 1880 - 58.						X	
	Shiniak, on east shore of Kuskokwim Bay at the end of deep-water navigation, north of Kanektok River, 50 miles northwest of Goodnews. Reported in 1826. Population in 1880 - 40. Moravian Mission warehouse in 1910.						X	
	Takiketak, on the east shore of Kuskokwim Bay near mouth of Cripple Creek, 21 miles northwest of Goodnews. Former village reported in 1879. Population in 1880 - 21.					X		
	Togiaratsorik, on the left bank of the Kuskokwim River near its mouth. Reported in 1880 Census as Taghiaratzoriamute.						X	
	Tuklak, on Kuskokwim River below the Yukon portage between Kwigalok and Uknavik. Former village or camp reported in 1879 with a population of 92. Near Lower Kalskag.						X	
	Tuluksak, on the left bank of Kuskokwim River, 66 miles above Bethel. Present site on south bank of Tuluksak River, 48 miles southeast of Russian Mission. Reported in 1842-44; population in 1880 - 150.	X						
	Tunagak, location unknown. Population in 1880 - 71 as Tunaghamiut.				X			
	Ugovik, on right bank of Kuskokwim River between Lower Kalskag and Tuluksak, 40 miles southeast of Russian Mission. Var. Uknavik. May be the same as Oogovigamute. Population in 1880 - 206. Reported abandoned in 1950.						X	
	Ulokak, near mouth of the Holokuk River, Kilbuk, Kuskokwim Mountains. Var. Ulokagmiut. Reported in 1890 Census.					X		
	Yakchilak, near the mouth of the Kuskokwim River on Helmick Point, 43 miles southwest of Bethel. Var. Yachtshilagamiut. Reported in 1878 by Nelson.						X	
Chingigmiut	Their territory was in the region of Cape Newenham and Cape Pierce; their settlements were:							
	Aziavak, near Cape Pierce at mouth of Osviak River. Var. Osviak or Azeviuk. Former village; population in 1880 - 132 by Petroff.					X		
	Kinegnak, on Cape Newenham, one mile north of Chagvan Bay at junction of Kinegnak and Kookukluk rivers, 28 miles from the Cape. Original site on south point of Cape Newenham, 39 miles southwest of Goodnews. Population in 1890 - 76. People moved to present place of Goodnews Bay.	X						
	Tzahavak, on south shore of Chagvan Bay, 20 miles south of Goodnews Bay. Population in 1880 - 48.						X	

Sources: Hodge, Frederick Webb (ed.). Part I and Part II: *Handbook of American Indians North of Mexico*. Washington: Government Printing Office, 1907.

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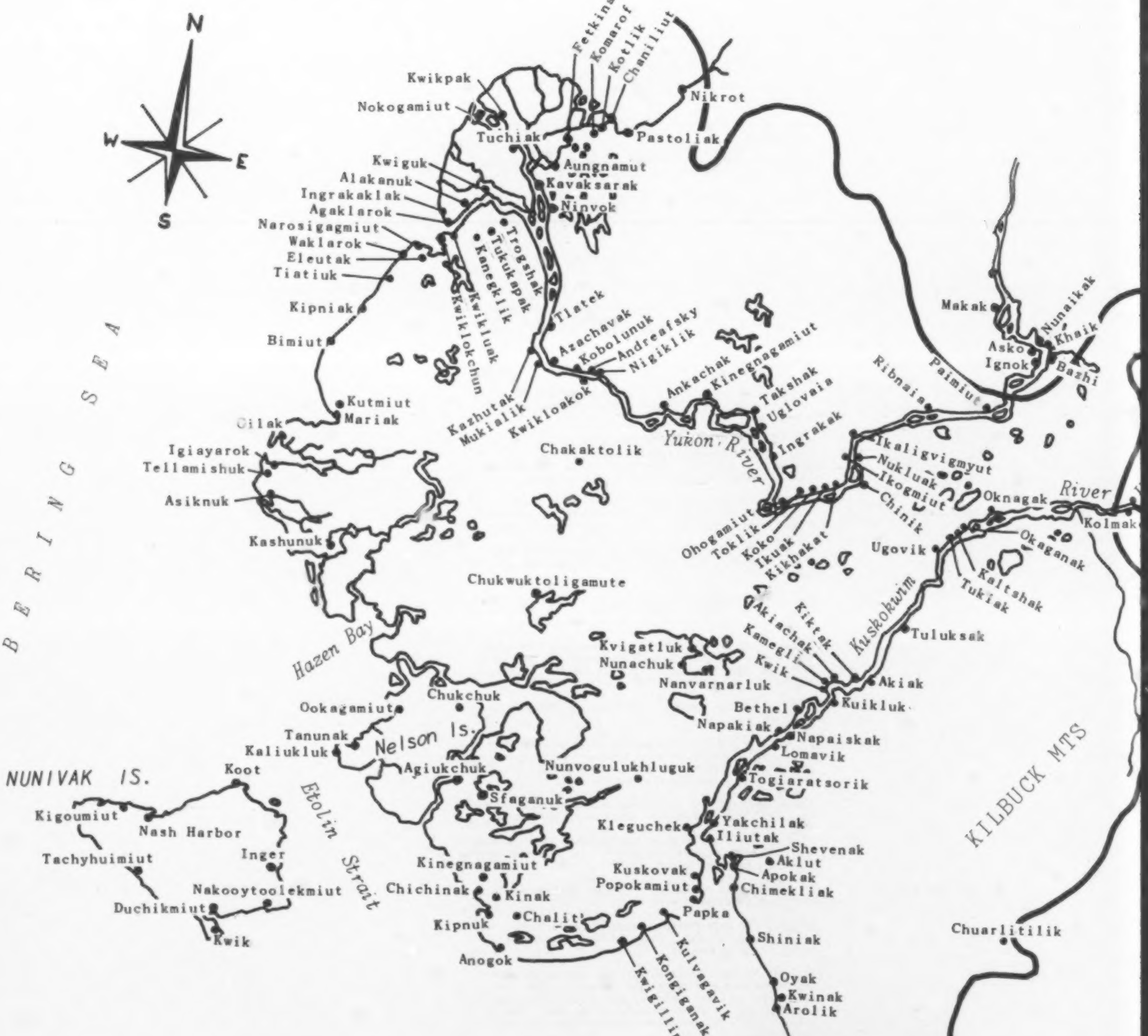
With additional interviews from local Native sources.

Compilation by David M. Hickok, Federal Field Committee for Development Planning in Alaska.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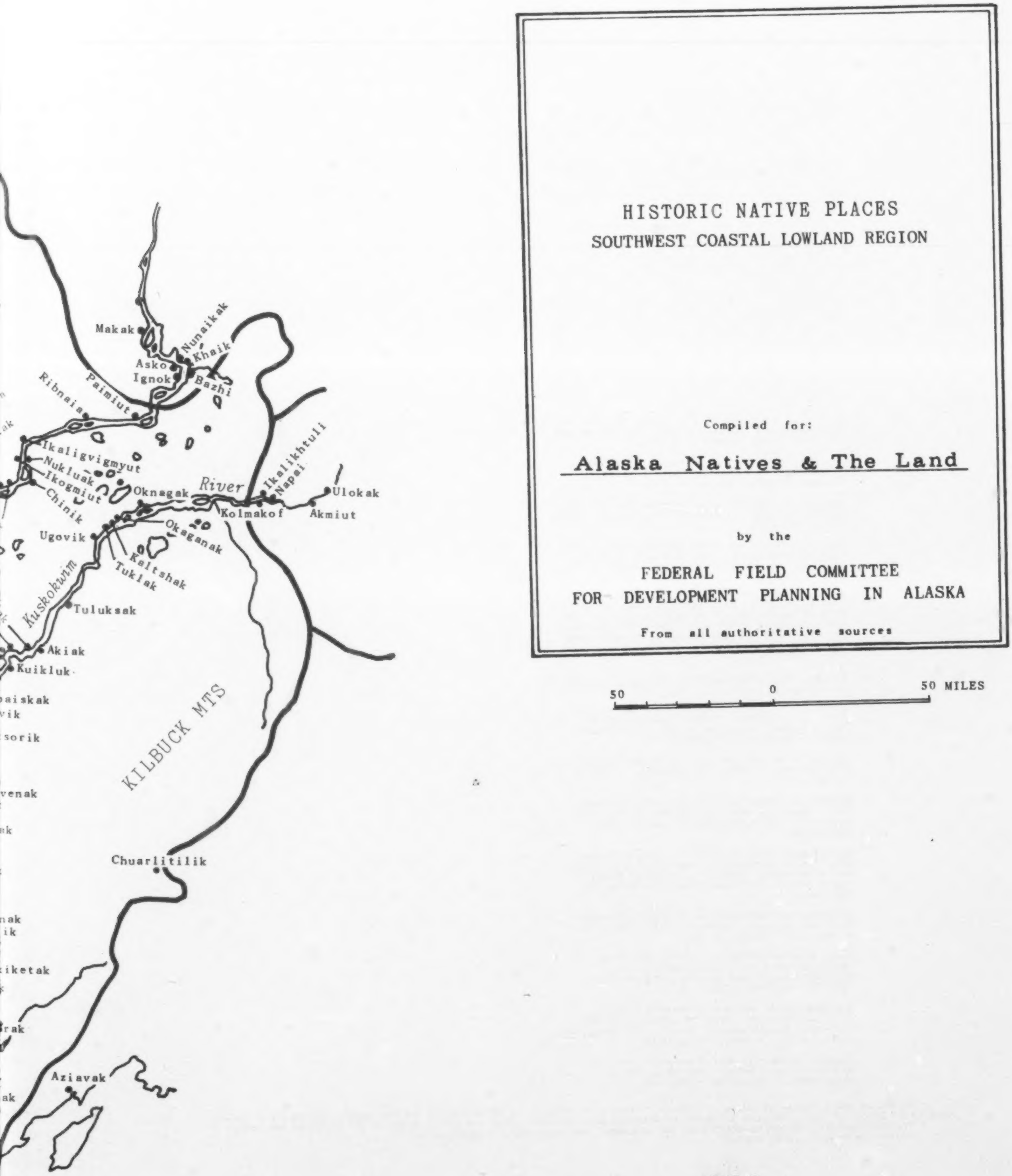
Kwiguk
Aungnamut
Alakanuk
Kavaksarak
Ingrakaklak
Ninvok
Agaklarok
Narosigagmiut
Waklarok
Eleutak
Tiatiuk
Trogshak
Tukukapak
Kanegklik
Kwikluak
Kwiklokchun
Kipniak
Bimiut
Tlatek
Azachavak
Kobolunuk
Andreafsky
Nigiklik
Kinegnagamiut
Ankachak
Takshak
Uglovaia
Kazhutak
Mukislik
Kwikloakok
Kutmiut
Mariak
Gilak
Makak
Nunaikak
Khaik
Asko
Ignok
Bazhi
Ribnaia
Paimiut
BERING SEA
Igiayarok
Tellamishuk
Asiknuk
Chakaktolik
Yukon River
Ingrakak
Ikaligvigmyut
Nukluak
Ikogmiut
Chinik
Oknagak
River
Kolmak
Okaganak
Kaltshak
Tukiak
Ugovik
Kashunuk
Ohogamiut
Toklik
Koko
Ikuak
Kikhakat
Chukwuktoligamute
Kuskokwim
Kiktak
Akiachak
Kamegli
Kwik
Tuluksak
Hazen Bay
Kvigatluk
Nunachuk
Nanvarnarluk
Akiak
Ookagamiut
Chukchuk
Bethel
Kuikluk
Napakiak
Napaiskak
Lomavik
Tanunak
Kaliukluk
Nelson Is.
KILBUCK MTS
NUNIVAK IS.
Koot
Agiukchuk
Nunvogulukhluguk
Togiaratsorik
Sfaganuk
Kigoumiut
Nash Harbor
Etolin Strait
Yakchilak
Kleguchek
Iliutak
Shevenak
Aklut
Apokak
Chimekliak
Tachyhuimiut
Inger
Kinegnagamiut
Kuskovak
Popokamiut
Nakooytoolekmiut
Chichinak
Kinak
Duchikmiut
Chalitl
Papka
Kipnuk
Kwik
Shiniak
Chuarlitilik
Anogok
Kulvagavik
Kongiganak
Kwigillinogok
Oyak
Kwinak
Arolik
Takiketak
Klchakuk
Kuskokwim Bay
Mumtrak
Aziavak
Kinegnak
Tzahavak

FIGURE III - 43



HISTORIC NATIVE PLACES
SOUTHWEST COASTAL LOWLAND REGION

Compiled for:

Alaska Natives & The Land

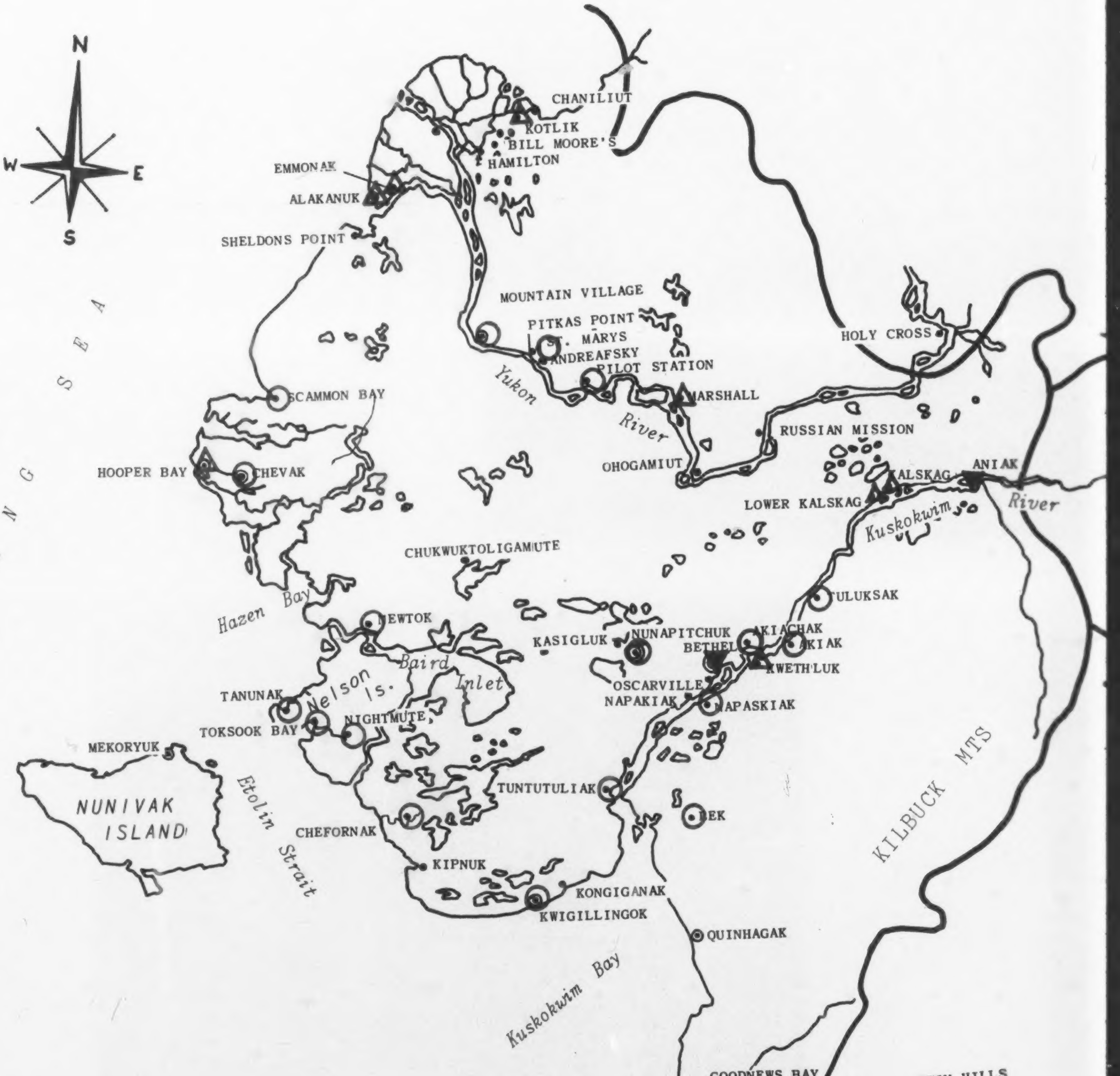
by the

FEDERAL FIELD COMMITTEE
FOR DEVELOPMENT PLANNING IN ALASKA

From all authoritative sources

50
0
50 MILES
Makak
Nunaikak
Khaik
Asko
Ignok
Bazhi
Ribnaia
Paimiut
Ikaligvigmyut
Nukluak
Ikogmiut
Chinik
Oknagak
River
Ikalikhtuli
Napai
Ulokak
Kolmakof
Akmiut
Okaganak
Ugovik
Kaltshak
Tuklak
Kuskokwim
Tuluksak
Akiak
Kuikluk
KILBUCK MTS
Chuarlitilik
Aziavak

FIGURE III - 43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KOTLIK
BILL MOORE'S
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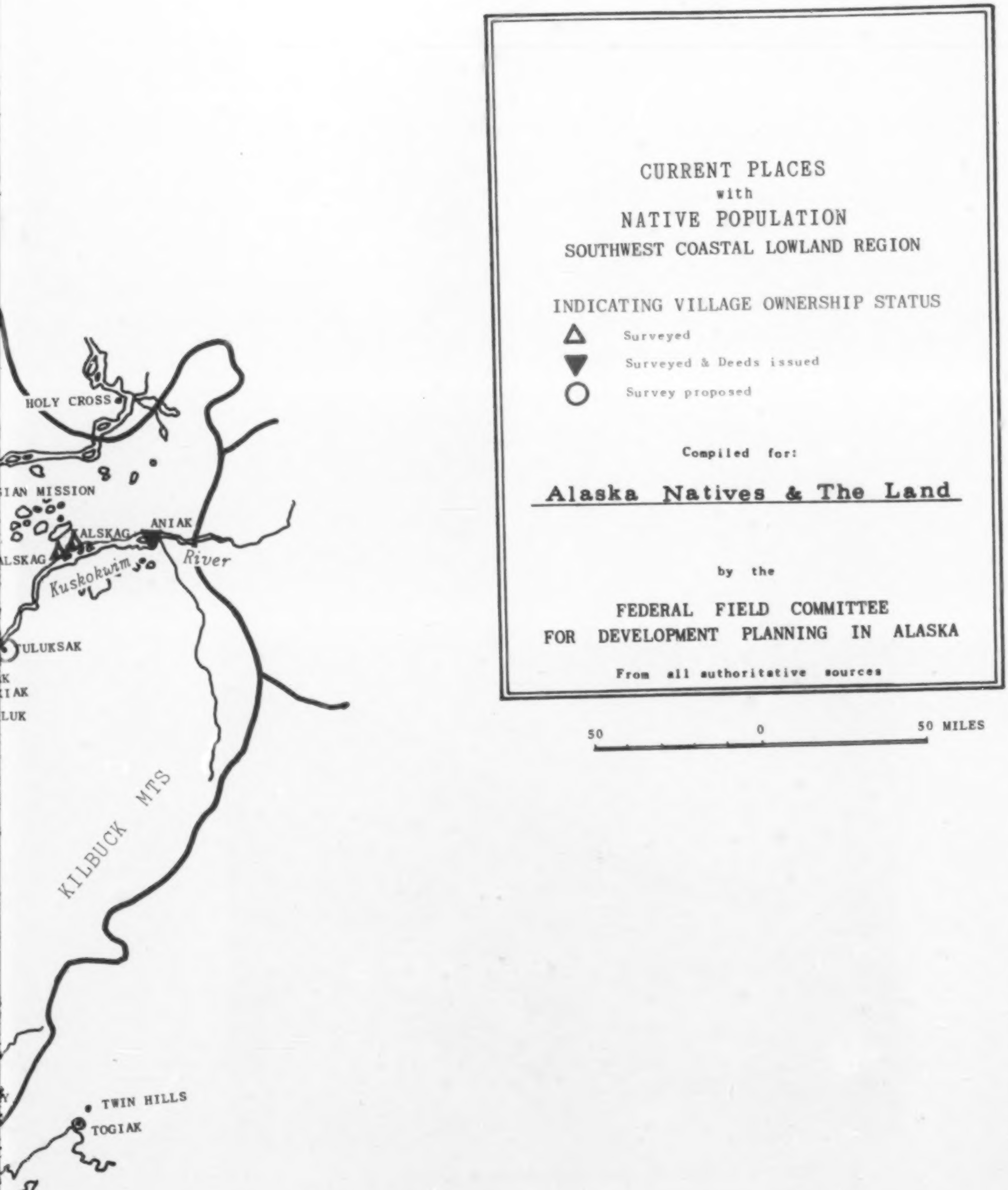
EMMONAK
ALAKANUK
SHELDONS POINT
MOUNTAIN VILLAGE
PITKAS POINT
ST. MARYS
ANDREAFSKY
PILOT STATION
Yukon
River
MARSHALL
HOLY CROSS
SCAMMON BAY
RUSSIAN MISSION
HOOPER BAY
CHEVAK
OHOGAMIUT
KALSKAG
ANIAK
LOWER KALSKAG
River
Kuskokwim
CHUKWUKTOLIGAMIUTE
Hazen Bay
NEWTOK
TULUKSAK
KASIGLUK
NUNAPITCHUK
AKIACHAK
BETHEL
AKIAK
KWETHLUK
Baird
Inlet
Nelson Is.
TANUNAK
OSCARVILLE
NAPAKIAK
NAPASKIAK
TOKSOOK BAY
NIGHTMUTE
MEKORYUK
NUNIVAK ISLAND
Etolin Strait
TUNTUTULIAK
EEK
CHEFORNAK
KILBUCK MTS
KIPNUK
KONGIGANAK
KWIGILLINGOK
QUINHAGAK
Kuskokwim Bay
GOODNEWS BAY
TWIN HILLS
TOGIAK
PLATINUM

FIGURE III - 44


CURRENT PLACES
with
NATIVE POPULATION
SOUTHWEST COASTAL LOWLAND REGION
INDICATING VILLAGE OWNERSHIP STATUS
△ Surveyed
▼ Surveyed & Deeds issued
○ Survey proposed
Compiled for:
Alaska Natives & The Land
by the
FEDERAL FIELD COMMITTEE
FOR DEVELOPMENT PLANNING IN ALASKA
From all authoritative sources
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TWIN HILLS
TOGIAK

FIGURE III - 44

... Four places had schools established between 1941 and 1950--two have been continuous to date, one intermittent in operation, and one discontinued.

... Ten places had schools established between 1951 and 1960--seven have been continuous to date, one intermittent in operation and two discontinued.

... Two places have had schools established since 1961--both have been in continuous operation to date.

Thus, of 35 schools established in the region from 1885 to date, 21 have been in continuous operation, eight have had an interrupted and intermittent history, and six have been discontinued. This record is, of course, weighted by post World War II improvements. More appropriate to this discussion of settlement pattern influence is the record prior to 1940. From 1885 to 1940 sixteen schools were established: three by church, thirteen by government; of these, seven have been continuous, six intermittent and three discontinued.

The effect of this available educational history was to accentuate or speed village population shifts, disappearance or movement initially caused by human environmental responses. Of six places whose schools have been discontinued since 1933, five villages are now totally abandoned and one has a Native population of only twenty people. All six villages had populations between 35 and 79 at the time of school closure.

The impact of governmental health services upon Native settlement patterns had very little impact until the post World War II period.

Thus, in this region the historic Native settlement pattern has been influenced nearly entirely by environmental forces--physical land subsidence, the rerouting of waterways through erosion and accretion, and the biotic responses of fisheries and wildlife populations to physical habitat changes--all causing man to make adjustments in his living patterns in order to survive.

The succeeding record of historic Native places, shown in Figure III - 42, indicates transition from essentially Nineteenth Century places of record to current status. If time had permitted the appropriate research into the early Twentieth Century period--at least to about 1940--another full set of place names would emerge since many places were established and abandoned during this period and the tabulations and maps of this report do not reflect their existence and abandonment.

Environmental Livelihood Patterns

Despite recent intrusions of church and government into the cultural and economic ways of the Eskimo of the Yukon-Kuskokwim delta country, including the advent of a partial cash economy from fisheries, furs, arts and crafts and welfare subsidy, Native survival depends upon the environment. Simply put, it must be emphatically said that without the seasonal round of subsistence harvest of fisheries, wildlife and berries most people would die!

The seasonal, present-day food quest of five villages, generally representative of the region's habitats, are recorded in recent research by the Arctic Health Research Center.

These patterns are worthy of complete notation. Note that the pattern changes from Akiak, located in an interior river habitat, to Napaskiak, an interior river-tundra village, to Kasigluk, a tundra village, to Newtok, a tundra-coastal environment, to Hooper Bay, a coastal village.

FIGURE III - 45

PRESENT FOOD QUEST ACTIVITIES OF SELECTED VILLAGES
OF THE SOUTHWEST COASTAL LOWLAND REGION

Season	Foods Available	Remarks
AKIAK (Southwest Interior-River Eskimo)		
FALL (September and October)	Moose Mink Ducks Geese	Moose are the most important meat source at this time of the year. Most of the active hunters in the village get one each during the regular hunting season and another when special hunts are allowed. Only a few bear, mostly black but occasionally a grizzly, are caught each year in the Alaska Range foothills. Usually only 2, occasionally as many as 5, are obtained for the entire village. Mink trapping is only fair in the area but the meat is relished. Ducks and geese are generally available, but usually only enough for immediate needs. They are not stored for winter use to any great extent.

Season	Foods Available	Remarks
	Plant Food	"Mousenuts" are gathered in moderate amounts. These bits of root and Eriophorum (ssp). seedlings are found in underground caches around tundra lakes and ponds. In the past the Eskimo stored them in tightly sealed unlined ground pits but nowadays they are put in gunny sacks and stored in the shed or other cool place. They are not collected and used in the quantities they formerly were.
WINTER (November thru April)	*Fish* Ling Cod Whitefish Sheefish Pike Blackfish	Intermittently throughout the winter limited supplies of fresh ling cod, whitefish, sheefish and pike are caught in willow root traps placed under the river ice. Blackfish are caught in similar but smaller traps placed under the ice in tundra streams and sloughs. These fish provide only occasional meals of the fresh product throughout the long winter season for those remaining in residence at the village. Individuals who still go to spring camp in April obtain considerable quantities of blackfish, most of which is dried for future use.
	Meat Beaver Rabbit Ptarmigan Muskrats Geese Ducks Spruce Hens	Beaver are available in February. In 1958, the year diets were collected at this village, only five Akiak men trapped beaver seriously. These men obtained the maximum catch allowed which varied from 10 to 25 animals, depending on the drainage area trapped. The fur is sold; the meat eaten. Rabbits and ptarmigan are snared and used to a very limited extent. Muskrat meat is an important late winter or early spring food for Eskimo families who still establish spring camps out on the tundra. They may also obtain limited numbers of geese and ducks, and spruce hens--but only enough to meet daily family food needs.

Season	Foods Available	Remarks
SPRING (May and June)	Smelts	Immediately after the ice goes out of the river in May, smelts are obtained in good quantity by dip-netting. Most of the catch is dried and stored for dog feed. King salmon, which feed on the smelts, are the next on the list of fish obtained from the river. They are used fresh in season, but the major portion of the catch is dried for future human consumption. Smaller amounts of this fish may be salted, smoked or canned. Most families preserve 25-50 pounds of king salmon roe for human consumption, but the bulk of it is stored in barrels or kegs and used for dog feed.
	Sourdock	Sourdock is no longer stored in quantity as it was formerly. Only a few families gather it to any extent.
	Squirrels	Ground squirrels, the meat of which is relished as human food and the skins for making parkas, are still used in moderate amounts.
	Bear (black or brown)	Only an occasional bear is caught.
SUMMER (July-August)	Salmon (Dog, Silver) Whitefish Sheefish	The netting and preparation of dog salmon for future use continues throughout most of July. A smaller run of silver salmon follows, most of which is either salted or dried for winter use. Whitefish and sheefish are obtained in limited amounts, usually by netting or with fish traps.
	Berries	Most years moderate supplies of cloudberries are available from the surrounding tundra--usually from mid to late July. Later in the season low-bush cranberries and crowberries are also obtained. Each family stores from 50 to 200 pounds or more of berries for winter use.
	Seal (meat and oil)	Most families obtain limited amounts of seal meat and from 1 to 2 pokes of seal oil, averaging about 65 pounds each, by cash purchase from Kipnuk and Nunivak Island Eskimos visiting the Bethel area.

Season	Foods Available	Remarks
NAPASKIAK (Southwest Interior River-Tundra Eskimo)		
FALL	Ducks Geese	Ducks and geese continue to be available at least during the early part of the season. Very limited supplies of geese are salted for winter use.
	Moose	Moose are not available near the village but in recent years a few of the young hunters have gone upriver to hunt them during the open season. Only 3 moose were brought back to the village in 1958. Most hunters are unable to finance trips of this kind.
	Whitefish Ling Cod Pike Blackfish	Early in the season whitefish are obtained from tundra lakes and ponds; pike and ling cod are obtained first from neighboring sloughs and after freeze-up from the river. Families which still establish fall camps on the tundra usually get large quantities. Blackfish are available in October.
	Seal and Seal Oil	A few men from the village go sealing at the mouth of the Kuskokwim River, but most Napaskiak families obtain seal meat and oil by purchase from the coastal Eskimos. The usual cost in 1958 was $5 to $10 per carcass and $20 to $30 per seal poke (50 to 100 pounds) of oil. An estimated 2000 pounds of meat and oil are purchased yearly (Bureau of Indian Affairs Economic Report) (II).
	Berries	Lowbush cranberries and crowberries are usually available in quantity from this area. They are eaten almost daily in season and moderate amounts, much less than in the past, are stored for winter use. Only about 1/4 to 1/3 of the families establish fall berry and fish camps; the rest depend on what is available in the local area.

Season	Foods Available	Remarks
WINTER	*Fish* Ling Cod Pike Sheefish Blackfish	Through November and December there is sporadic fishing for ling cod and pike and from November through March for sheefish through the river ice. They are not available in large quantities. From mid-March on blackfish are caught in willow root traps in nearby sloughs and other suitable waterways often in goodly amounts.
	Small Game Mink Rabbit Ptarmigan Muskrats	Mink are trapped and rabbits snared from mid-December on. The yearly estimate of rabbit meat consumed is about 200 pounds for the entire village. Some years there are very few available. The meat of the mink is eaten, the skins sold. The year (1956) Oswalt (75) was in residence the average catch per trapper was 10-15 mink. Ptarmigan and rabbits are usually available and obtained by means of snares from about December through April or May. Muskrats are trapped in early April.
SPRING	Blackfish Whitefish Pike Smelts King salmon Sheefish	Early in the season blackfish are still obtained from tundra sloughs and ponds, using willow root traps. Relatively small amounts of pike are obtained from sloughs in the neighborhood of the village, and whitefish from tundra lakes and ponds; the latter fish are more important in the diet of those families establishing spring camps on the tundra. In late May, after the ice has gone from the river, smelts ascend the river and considerable quantities are obtained using dip nets. Any excess to immediate needs is dried for winter use, mostly as dog feed. The smelt run is closely followed by the king salmon run (early June). They are usually available in good amounts and obtained with both set and drift nets. Most of the catch is dried although some families do salt moderate amounts. A few sheefish may also be caught in the nets.
	Muskrats	This animal is obtained usually in good quantity in early May be trapping in tundra lakes and sloughs. The meat is eaten fresh and any excess beyond immediate needs is dried; the skins are sold.

Season	Foods Available	Remarks
	Birds and Eggs	Ptarmigan and wildfowl and wildfowl eggs are obtained out on the tundra but are used in considerably lesser quantities than formerly since very few families now establish traditional spring camps (May), although some muskrats and wildfowl are obtained near the village environs.
	Greens	Sourdock (*Rumex artica*) is the most common wild edible green in this area. While many families still gather this green they do so less assiduously than in the past. Only minimal amounts are stored for winter use.
	Seal	A few men still go down river near Eek to hunt seal but the number obtained is small--about 5 to 6.
SUMMER	*Salmon* Dog Red King Silver	Early in the season, both red and dog salmon, but especially the latter, are usually obtained in abundance. Only an occasional king salmon is caught at this time. Later in the season (August) silver salmon are also available in good quantity. All of these fish are used fresh in season but most of them are dried for winter use. A significant portion may also be salted or putrified by burying them in ground pits.
	Pike	Only an occasional pike is taken from the river throughout this season.
	Whitefish	Significant quantities of whitefish are obtained from the Johnson River which enters the Kuskokwim River about 20 miles below the village.
	Greens	Sourdock, willow leaves and other greens are collected in moderate amounts throughout the early part of the season, mostly from wet places on the nearby tundra.
	Wildfowl	Ducks and geese are obtainable late in the season, usually in limited quantities and for immediate use only.
	Berries	A number of families still collect moderate quantities of cloudberries, mostly from their spring trapping and camping areas.

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Season	Foods Available	Remarks
KASIGLUK (Southwest Tundra Eskimo)		
FALL	Berries	The harvesting of cloudberries and other berries is continuous throughout the fall.
	Ducks Geese	Most of the wildfowl obtained during the fall of the year are used fresh in season and only moderate amounts are preserved by salting.
	Pike Whitefish	Pike, but primarily whitefish, are available in good quantity at this season of the year, the latter being obtained by dip netting. In the fall the men construct a willow fence across the Willidulli Slough. During the fish run they dip from their boats moored at this fence day and night as long as the run lasts. Most of the fish catch is air-dried. The liver, stomach, intestines, roe and visceral fat are highly prized as human food and used in a variety of mixtures.
WINTER	Pike Whitefish Ling cod Blackfish	Sporadic fishing is continuous throughout the winter season. Pike, whitefish, ling cod and blackfish are obtained in moderate amounts usually in quantities sufficient to satisfy day to day needs only.
	Mink	Mink are trapped, mostly in November, in limited numbers. The meat is used for both human and dog food; the furs are sold.
	Rabbits	Rabbits are caught with snares, mostly in November and December. They are rarely available in significant numbers.
	Willow Ptarmigan	Ptarmigan are caught with snares in winter and early spring, but are not usually available in large numbers except in an occasional year.
SPRING	Whitefish Pike	Pike and whitefish, especially the latter, are obtained in good numbers from the Willidulli Slough that flows through the village; and from neighboring lakes and sloughs, after the ice has gone out in May. Fresh fish are used in season, but the bulk of the catch is dried for the next winter's use. A few families usually stay at the village year round and fish almost continuously for whitefish.

Season	Foods Available	Remarks
	Salmon	Salmon is not available at the village site, but almost the entire population moves to traditional fish camp sites on the banks of the Kuskokwim River near Bethel. The people leave Kasigluk in May, soon after the ice disappears from the rivers, and do not return to their village until late August or early September. The first salmon to appear are the kings. Considerable quantities are dried and stored for use on winter diets.
	Muskrats	To obtain even limited numbers of this small animal requires much travel in the local tundra area. The meat is eaten fresh and when plentiful moderate supplies are dried for future use.
SUMMER	Salmon Dog Red Silver	The biggest salmon run in the Kuskokwim River is that of the dog salmon in July. Large amounts are dried for winter use. They are the most important dietary item for both humans and dogs in the Kuskokwim River basin. Later in the season more limited runs of red and silver salmon occur.
	Wildfowl	Wildfowl are much less important in the late spring and summer diet of these people than they were in the past. Until recent times large numbers were secured by "rounding up" the immature and molting birds. This practice has now been discontinued.
	Berries Cloudberries Low-bush cranberries Crowberries Blueberries	Cloudberries are available in late July. They are not collected in the amounts they formerly were, due chiefly to the fact that few families now establish summer camps for this purpose. The able-bodied men from most families now obtain summer employment at the canneries, at Bethel or wherever they can find it. Their families stay either at the village, or at their fish camps near Bethel or at Bethel itself. Late in the season other berries, particularly crowberries, blueberries and low-bush cranberries are harvested in variable amounts from the tundra in both the Kasigluk and Bethel areas. From 100 to 200 pounds or more are stored for winter use by many families; considerably less by others.

Season	Foods Available	Remarks
NEWTOK (Southwest Tundra-Coastal Eskimo)		
FALL	Muskrat	Considerable numbers of muskrat are caught by most families. Any meat excess to immediate needs is dried; the skins are either sold or used to make parkas.
	Seal	The large bearded seal, called "mukluk" locally, and the spotted seal are occasionally caught at this time of the year, usually in the bay waters near old Keyaluvik. In some years they are obtainable in goodly numbers.
	Tom cod Blackfish	Moderate amounts of tom cod are available. Most of the catch is dried for winter use except for the livers which are used fresh. Throughout September, moderate quantities of blackfish are caught in willowroot baskets in tundra ponds and small streams.
	Berries	Cloudberries, crowberries, blueberries and especially low-bush cranberries are collected and used, but generally not in sufficiant quantities for storage as the numerous quaking bogs in the general area make gathering them difficult.
WINTER	Blackfish Needlefish	Blackfish and needlefish, especially the latter, are usually obtained intermittently throughout the winter season but in especially good quantities in November and December.
	Seals	The serious hunting of seals starts after Christmas when the men make overnight trips to the coast to obtain them. Seals are most plentiful, however, in April and May at which time the entire family may move to traditional camp sites near old Keyaluvik on the mainland and/or on Nelson Island.
SPRING	Seal	If shore ice conditions are satisfactory, sealing at the traditional camp sites may continue well into May. Only an occasional seal is caught after the ice goes out of the Bay.

Season	Foods Available	Remarks
	Herring Smelt Flounder Sculpins	Herring are usually available in good quantity. The dried or 'poke' herring is one of the most important foods found on the winter dietary. Occasionally, as in 1960, excessively wet weather prevents proper drying of the fish and as much as 50% of the catch may be lost through spoilage. A smelt run sometimes follows the herring run but not every year; there was none in 1957. A relatively small species of flounder is caught with nets at sea and in what is called locally the 'big river', a narrow waterway flowing between Baird Inlet and the sea which separates Nelson Island from the mainland. Some of this fish is eaten fresh but most of it is dried for dog feed. Sculpins, locally called devilfish, are also available in limited supply.
	Wildfowl	Wildfowl, mostly ducks and geese, which nest in the fish camp area, and their eggs are available in significant quantities and are important on the spring dietary. They are not stored to any great extent for winter use.
	Sourdock	Sourdock is available in the general area, and is eaten fresh and cooked; usually only enough is available to satisfy immediate needs.
SUMMER	Herring Flounder	The summer fishing season is much like that of late spring with continued supplies of herring and flounder caught and dried. Large quantities of herring eggs are also dried and used primarily for dog feed.
	Seal Wildfowl Greens Muskrats	Only an occasional seal, a few ducks and geese, sourdock in limited amounts and a few muskrat (August) are available at this season.
HOOPER BAY (Southwest-Coastal Eskimo)		
FALL	Berries	Crowberry and low-bush cranberry are collected in considerable quantity by most families.

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Season	Foods Available	Remarks
	Fish	The annual tom cod run occurs in September and they are usually available in sufficient quantities so that sizeable supplies are either dried or prepared as 'pokefish'. Occasionally, as in 1956, there is no tom cod run. Significant amounts of blackfish (from 1000 to 4000 pounds depending on the year) are caught in traps set in the surrounding sloughs or they may be obtained in the Kashunuk area.
	Vegetable	Mouse food or "mousenuts" as they are locally called consisting of the young tender seedlings of native grasses and bits of root from several tundra plants--which the field rodents have stored in underground caches for their own winter use, are often gathered by the women in the late fall. One to two large gunny sacks full per family may be collected and stored. Some years, as in 1957, 1960 and 1961, none were available. "Mousenuts" are most often used as a soup ingredient. A few families still collect moderate amounts of the plant called Tayahuk (*Hippuris vulgaris*) which grows in shallow tundra ponds. The portion gathered is that which protrudes above the ice after freeze-up. They are fairly plentiful in the immediate village environs. They are most commonly used along with dried fish roe as a soup ingredient.
WINTER	Blackfish Needlefish Ling cod Smelts	From November through December the men continue to trap the sloughs for blackfish but usually only enough are taken for a few meals at a time. Also at this time a few of the men may go to the Cottock River, about 20 miles away, for whitefish. These fish obtained by netting under the ice are not always available in significant quantities. From November through March needlefish (sticklebacks and dace) are trapped in certain sloughs in the Hooper Bay--Scammon Bay--Kashunuk area. To obtain them usually necessitates travelling from slough to slough, sometimes considerable distances from the village. One hundred to five hundred pounds per family per year is the usual

Season	Foods Available	Remarks
	Blackfish Contd.	catch. They are used both as dog and human food. In January and February there is sporadic fishing for ling cod. They are caught with traps under the ice in rivers and lakes, usually at about 20 miles distance from the village. They are not plentiful. Sometimes in April, if shore ice conditions are suitable, there is a tom cod run, sometimes accompanied by smelts. The supply of both varies from year to year.
	Seal	Hunting for seal and ugruk continues intermittently throughout most of the winter. This activity is most productive when it is possible to hunt in open leads between ice floes, from about mid-March until the ice goes out in late May or early June. During the winter of 1956-57, seal hunting was poor due to extremely dangerous shore conditions followed by an unusually early ice "break-up". In 1957-58, however, sealing was considered especially good. The Bureau of Indian Affairs Economic Report (II) listed that year's take for the entire village at 680 seals and 53 ugruk.
	Walrus	A few walrus--only 7 in 1958--are taken each year.
	Mink	Mink are trapped from 'freeze-up' on. The furs are sold and the meat is used mostly for dog food.
	Rabbits	Arctic hare are found in limited numbers in the area, probably furnishing at most a total of 100 to 200 pounds of meat per year.
SPRING	Seal	Seal and ugruk hunting continues in the open lanes among the ice floes until the ice goes out of the bay. It may be fairly productive but is totally dependent on shore ice conditions.

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Season	Foods Available	Remarks
	Muskrat Mink	After the ice in the neighboring sloughs and ponds begins to melt muskrat are hunted but they are not always plentiful in the area. A kayak is still needed to get around successfully in this area at this time of the year. The 1958 catch of mink and muskrat was estimated at 2500 animals, or approximately 33 per family.
	Herring	Most years there is a significant herring run in late May or early June; but occasionally there is a year when the run completely bypasses Hooper Bay.
	Salmon King Dog Silver	Next to wildfowl, salmon is the most important food in this area. The kings arrive first, followed by dog salmon and, later in the season by a substantial silver salmon run. Most of the latter are prepared as 'poke fish' and are important on winter diets.
	Clams	Clams are available in June in quantities, up to 20 quarts per family per year, usually sufficient for immediate consumption only.
	Beluga	This animal, called *cheetak* at Hooper Bay and *beluga* elsewhere, is available either in late May or early June. Only a few are taken each year. The 1958 estimate was 6.
	Wildfowl and their eggs	From late April until about the first of June, various wildfowl, particularly ducks, geese, cranes and swans, arrive in tremendous numbers. Many are just passing over on their migration north but large numbers of certain species remain to nest and breed in the area. Brandt (15) lists 54 species of birds nesting in this area with waterfowl the dominant group. Several of these birds and their eggs are important foods in the dietary of the Hooper Bay Eskimo and many families may store moderate amounts for future use--either by salting or drying. The Bureau of Indian Affairs 1958 estimate of the Hooper Bay take was 500 dozen wildfowl eggs and 2310 waterfowl, mostly ducks and geese (11). This amounts to approximately one dozen eggs and 54 birds per person for the entire village.

Season	Foods Available	Remarks
	Ptarmigan	Ptarmigan also nest in the area and significant numbers are caught.
	Edible greens	Wild edible greens, mostly sourdock but also significant amounts of marsh marigold, are obtained from late May through June. This food is enjoyed fresh in season but a few families still store moderate amounts for winter use.
SUMMER	Whitefish Salmon Silver Dog	Silver and dog salmon are sometimes available in good quantity the first part of July but only if there are favorable north winds. During August there is sporadic fishing for whitefish. They are not available in significant quantities.
	Wildfowl	In past times, the latter part of July was the best time for "rounding up" immature and moulting ducks and geese but this method of obtaining them is no longer practiced. However, there is continued hunting for wildfowl by individual hunters throughout the summer. According to Petroff (13), "the autumn migration of birds passing south begins the latter part of July and only a few of the hardier waterfowl remain by the end of September."
	Berries	During late July and continuing on into September a variety of berries are gathered in quantity; sometimes as much as 100 to 300 pounds per family are stored for winter use. The most important berries are the cloudberry, the crowberry and the low-bush cranberry.

Source: Heller and Scott, *The Alaska Dietary Survey 1956-1961, op.cit.*, pp. 260-276.

Opportunity, based upon natural resource occurrence, for the Native people of this region to develop a successful cash economy, is extremely limited--*the most limited in all of Alaska.*

The facts are:

... The known geology of the region does not indicate the occurrence or likelihood of metallic minerals except in minor amounts peripherally in contiguous upland areas;

... Geophysical investigations for oil and gas resources, despite some structural potentials, have not been encouraging;

... Coal-bearing rocks of Nunivak and Nelson Islands are not commercial;

... Although small vitreous clay deposits are present, commercial utilization is impractical at present;

... Geothermal resource potential is slight;

... Phosphate and sulphur are unknown;

... Timber resources are non-existent over most of the region and of extremely marginal quality upriver on the middle Yukon and Kuskokwim rivers. This resource could permit some processing activity for local use and offers some potential for Japanese export, however large-scale harvest of timber stands, even by selective cutting methods, could cause environmental conflict with fisheries resource habitats;

... The potential for agricultural development is nil;

... Anadromous fishery stocks for commercial utilization beyond the levels of current and expected future subsistence harvest requirements are present but limited, even with the needed improvement of utilization methods;

... Oceanic fishery resource potentials are virtually unknown except for meager data on halibut fishery potential off Nunivak Island and any potential exploitation of herring, tanner crab and other species will require several years of exploratory investigation and research. Additionally, the capital development requirements for an oceanic harvest fleet are beyond probable local economic investment levels at the present time, and will remain so for at least several years, and even if possible a local fleet would be at an economic disadvantage with other fishery fleets based at Bristol Bay, Aleutian or Kodiak ports due to port facilities and other factors;

... Marine mammals of economic importance do not frequent the region except in relatively minor numbers off Nunivak Island, Cape Romanzof and near Cape Pierce. Expansion of marine mammal harvest could be locally helpful but would remain regionally insignificant;

... The Native reindeer industry is limited to Nunivak Island and, although reintroduction to some mainland habitats is possible, a host of management problems need solution; such action poses problems of conflict with national production habitat management objectives for migratory waterfowl;

... The direct economic potential of muskox for food and fiber on Nunivak Island is slight, and regional expansion habitats, except on Nelson Island, are non-existant, although possibilities for a small but locally significant hunting and guiding industry based upon this species' sport harvest is possible on Nunivak;

... Biotic resources for expansion of existing Native arts and crafts activity--basketing, masks, etc.--offer no handicap to industry expansion;

... Mammalian fur-bearer resources are currently harvested extensively--beyond the extent of marketable fur demands--for in this region even mink meat is part of the human diet.

These dismal facts on resource-economic potentials are recited here to underscore the continued Native dependence upon the biotic resource for protein, health and survival. No glib, uninformed, theoretical pronouncements can change the natural resource endowments of the region, and, in summary, we can note that only the anadromous fishery resource--of the entire natural resource spectrum--offers any significant potential for cash income to augment subsistence food harvest requirements. Even here the impact can only be local around the Bethel area where facilities are capable of development and may be served by adequate transport arrangements, since the Yukon fisheries run is virtually totally committed to subsistence use and coastal and tundra villages are too far removed from the scene to benefit from Kuskokwim River commercial fishery harvests.

These facts are extremely important to understand if land tenure adjustments and possible monetary settlements for the Natives of the region are to be achieved in harmony with environmental subsistence requirements.

Two other important considerations, pertinent both to Native settlement patterns of the region and to Native subsistence harvest, are worthy of note.

First, is the overlapping juxtaposition of Native villages and family or group seasonal fishery or hunting camps. A large part of the region's population, drawn by governmental services, now clusters about the Bethel area. Here they have "permanent" residence, but families and groups are ties by historic, aboriginal "user rights" to many hunting and fishing camp sites throughout the region. Some people go downriver, others upriver to seasonal fish camps. People above Bethel go downriver while those below often go up to their camps.

Similarly for hunting and trapping, river people have tundra or tiaga camps for their food quests of waterfowl, moose or fur-bearers, and the tundra Native has his fish camp along the river or a main slough.

The second point of note concerns the amount of acreage ranged by the Native people of various villages for their subsistence food quest. This is of basic importance, for in a bewildering pattern of overlapping range the entire Yukon-Kuskokwim fish and wildlife resource is annually harvested at near carrying capacity levels by the Native of the region. For example, the Nelson Island Native ranges along the whole coast of Etolin Strait for fish and marine mammals and inland for trapping and hunting to beyond Baird Inlet and Dall Lake; the Napaskiak Native fishes at the mouth of the Kuskokwim, hunts waterfowl about Baird Inlet and gets his moose above Akiak on the Kuskokwim. Thus, it is over the entire region that the food quest pattern is governed by traditional, historic family camp site locations, by food availability cycles and by his transport means of seeking food--recently expanded by the advent of the snow machine making his range and success even greater.

KOYUKUK-LOWER YUKON REGION

Ethnic Settlement Patterns

The Native population of this region has historically been sparse. This much we know, but little more, since the scope of historic ethnographic investigation in the Nineteenth Century record has virtually nothing more to it than that recorded by Zagoskin in his explorations of the 1840's and by Petroff in his 1880 census.

At the turn of the century, during the gold fever days, a few additional observations on Native places were made, but most observers were more concerned with the white man's search for gold than with aboriginal ethnography.

From these scant early records and from more recent research, we know the Native population of the region included several ethnic groups and sub-groups.

The Koyukuk people of Athapascan linguistic stock were the dominant ethnic group of the region, and this remains true today. They are divided into three sub-groups[54]: the Kaiyuhkhotana, on the Yukon between Anvik and Koyukuk--including the drainage of the Innoko River; the Koyukukhotana, on the drainage of the Koyukuk River; and the Yukonikhotana between the Tanana and Koyukuk Rivers along the Yukon. Of secondary importance were the Ingalik of the region, also Athapascan and divided into four sub-groups, three in this region: the Anvik-Shageluk group; the Bonasila group; and the Holy Cross-Georgetown group--all located about the villages of these names.

In addition, a few Tanana Indian people settled below the confluence of the Tanana and Yukon rivers within the region, and some Eskimo intrusion into the Indian territory occurred in the region above Holy Cross on the Yukon, near the junction of the Yukon and Koyukuk and along the upper reaches of the Koyukuk.

In several areas within the region the various groups lived relatively compatibly in neighboring villages and camps. For example, the villages of Eskimo people, intruders into the Indian territory, were often located only a few miles away or across the river from existing Ingalik or Koyukuk villages.

Russian influences began to penetrate the middle Yukon and the country of the Koyukuk people as early as 1838[55] shortly after the settlement of Kodiak and before settlements were established in the delta region of the Kuskokwim and Yukon. Their most important settlement was a trading post at Nulato. It operated between 1838 and 1851 when it was destroyed in one of the very few Alaska Native uprisings of record.

In historic times, and still today, all the Native villages known in the region were located on or very near the major rivers--on the Koyukuk, the Yukon, and the Innoko.[56] These villages along the rivers were places of general year around occupation, although all the people were seldom present at any one period since they alternately dwelt in seasonal fishery, trapping or hunting camps in pursuit of their livelihood.

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[54] John R. Swanton, *The Indian Tribes of North America*. Smithsonian Institution, Bureau of American Ethnology, Bulletin 145. Washington: United States Government Printing Office, 1953.

[55] *Ibid.*

[56] See chart and maps, Figures III - 46, 47 and 48.

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Five major forces have affected their settlement patterns. These are:

- ... Natural physical phenomena--river channel changes, flooding, fire, slides, etc.;
- ... Biological influences--cyclic game periods of abundance and scarcity, changes in fishery runs and habitats;
- ... The attraction of early Russian trading posts;
- ... The gold rush with its trading posts and mining settlements and the use of the Yukon for steamer navigation dependent upon wood supplies for power; and,
- ... The location of governmental services--schools, hospitals, etc.

Of these, the greatest impact over time has been exerted by nature-related forces.

The Yukon River steamboat period in the late Nineteenth and early Twentieth Century, however, caused population shifts to the main stem of the river where Native people received employment, reimbursed by cash and barter for cutting and stacking wood for the steamboats along the river.

This influence caused the growth of many old and some new places, and this growth attracted government schools and other services which began stabilizing effects transcending even the impact of natural forces which had earlier caused relocations.

Figures III - 46, 47 and 48 show historic Native places and current village status with the region.

Environmental Livelihood Patterns

The pattern of subsistence harvest from the biological resource of this region has varied only slightly from that followed in aboriginal times to that required today for Native livelihood. The deviation, of course, comes from the advantages of a partial wage economy. The essential change in this subsistence harvest of fish and wildlife is one of *degree* not character. Further, the cash income varies greatly from family to family and village to village--and, therefore, so does the subsistence requirement.

There is in this region a wide variety of fish and wildlife resources for subsistence support, and the cycle of food quest activity reflects this variety. There is, however, a major dependence upon the riverine fishery.

FIGURE III 46

HISTORIC NATIVE PLACES AND CURRENT STATUS

KOYUKUK-LOWER YUKON REGION

NATIVE GROUP	HISTORIC PLACES	EXISTING SETTLEMENT POPULATIONS 25 - 299	300 - 999	1000 +	STATUS UNKNOWN	SEASONAL CAMP SITE	ABANDONED	ANTIQUITY SITE
Koyukuk								
Kaiyuhkhotana	Their settlements were:							
	Anilukhtakpak, on the west bank of Walker's Slough off the Yukon River. Same as Holy Cross described previously as an Ikogomiut Eskimo village.[a]	X						
	Iktigalik, on the upper reaches of the Unalakleet River. No information available. (Possibly Indian name for Ivan.)				X			
	Ivan, on the divide between Unalakleet and Yukon Rivers. Var. Ivans Barrabora. Small Indian settlement on trail between the rivers. Population in 1885 - 69 as reported by Allen. Near site of Twenty-two Mile Cabin.					X		
	Kaltag, on the right bank of the Yukon, 33 miles southwest of Nulato. Present village is former Upper Kaltag. Old Kaltag is Lower Kaltag. Population in 1880 - 45.	X						
	Khulikakat, on the Yukon River. Location unknown. Reported by Zagoskin in 1844 with population of 10.				X			
	Lofka, on the west bank of the Yukon River. Location unknown. No further references.				X			
	Nulato, on the north bank of Yukon River, 25 miles west of Galena. Founded in 1838 by Malakov as a Russian trading post. Burned by Koyukon Indians in 1838 and in 1839, and inhabitants killed in 1851. Trading increased and this became a predominately Native place in 1880 with a population of 168. Post Office established in 1897. Present place.		X					
	Taguta, on the north bank of the Yukon River 15 miles below the mouth of Khotel (or Kaiyuh) River. Reported in 1869 by Raymond as Tagutakaka.						X	
	Takaiak, east of the Yukon River near Nulato in the Kaiyuh Mountains, near Totson Mountain 23 miles southwest of Galena. Former Indian village reported as Letniki-Takaiak by Zagoskin in an 1850 map.						X	
	Tanakot, on the right bank of the Yukon River 8 miles north of Bullfrog Island. Former Indian village reported in 1880 as Tanakhothaik with population of 62.						X	
	Terentief, on the Yukon below junction of Koyukuk River. Former Indian village reported as Terentief's Barabara, with a population of 15 in 1880. Possibly year-long occupancy by one or two families as well as seasonal use.					X		
	Rodokakat, Indian fish camp reported in 1901 by Father Jette. Present aircraft landing area on the river.					X		
	Tutago, on left bank of the Yukon opposite the mouth of Bear Creek. Former Indian village reported in 1848 as Tuttago by Zagoskin. Var. Tchouchago, Yakutskelignik.						X	
	Wolasatux, on the east bank of the Yukon on a small stream north of Kaiyuh River, 7 miles south of Nulato. Reported as Wolsatux by Allen in 1885. Near presently used Nine Mile Camp.					X		
Koyukukhotana	Their settlements were:							
	Allakaket, present place from influence of 1906 church mission.	X						
	Moses Village (or Arctic City), on right bank of Kokukuk River opposite mouth of Kanuti. One of largest Koyukuk villages. Named in 1898 after Chief Moses by prospectors. Mail and rail from Tanana changed name to Arctic Village but Natives had gone to mission site at Allakaket.					X		
	Batza, Koyukuk camp or village on Batza River at junction with Kuyukuk. Old site abandoned; several more recent camps in vicinity.					X		
	Dotle, on Koyukuk River. A Koyukuk camp or settlement cited by Hodge in 1907. Population in 1885 - 12. Location unknown.				X			
	Hughes, established in 1910 as supply point to gold fields at Indian River diggings. Gold gave out in 1915 and this place evolved into Koyukuk settlement as present time. Cited here because of proximity to Batza; illustrates influence exerted by white settlement.	X						
	Huslia, present place on left bank of the Koyukuk River, 12 miles northeast of Round-about Mountain (in the late 1940's the Koyukan Indians at Cutoff Trading Post moved four miles away--name changed to Huslia in 1952).	X						

SEASONAL CAMP SITE	ABANDONED	ANTIQUITY SITE
X		
	X	
	X	
	X	
X		
X		
	X	
X		
X		
X		

NATIVE GROUP	HISTORIC PLACES	EXISTING SETTLEMENT POPULATIONS 25 - 299	300 - 999	1000 +	STATUS UNKNOWN	SEASONAL CAMP SITE	ABANDONED	ANTIQUITY SITE
Koyukukhotana (Contd)	Kakliaklia, on Koyukuk River at the mouth of Sukloseanti River. Reported by Zagoskin in 1842-44. Location unknown.				X			
	Kautas, on Koyukuk River. Var. Cawtaskakat. Reported in 1887 by Allen; population 10. Location unknown.				X			
	Kokrines, on right bank of Yukon, 27 miles northeast of Ruby. Var. Cochranes, Newikargut. Indian village reported in 1880's.	less						
	Koyukuk, near the junction of Koyukuk and Yukon Rivers. Present place on right bank of the Yukon west of Kuyukuk Island and 16 miles northeast of Nulato; population in 1880 - 150. Post Office established in 1898.	X						
	Nohulchinta, on the South Fork of Koyukuk River three miles above the junction. Var. Nohoochinta. On the north bank of the South Fork. Allen reported six families in 1885. This site now abandoned, but several other camps in immediate vicinity.					X		
	Nok, on the west bank of Koyukuk River near its mouth. Former Indian village or camp reported as Nokhakate in 1844 by Zagoskin with a population of 50.						X	
	Notaloten, on Yukon River 20 miles above the mouth of Koyukuk River. Var. Natulaten or Notaglita. Population of 37 reported in 1844 by Zagoskin. Referenced again by Petroff in 1880 Census. Present place of Galena.	X						
	Oonigachtkhokh, on Koyukuk River. Location unknown.				X			
	Soonkakat, on left bank of the Yukon River south of Kokrines, 27 miles northeast of Ruby. Former Indian village reported by Dall as Sunkakat; now abandoned. Present place of Kokrines now on opposite bank.						X	
	Tashoshgon, on left bank of the Yukon at mouth of Pilot Slough, 10 miles southeast of junction with Koyukuk River. Reported by Zagoskin in 1842-44. Population in 1880 - 30.						X	
	Tlialil, on left bank of Yukon near the mouth of Patsy Slough, 3.5 miles northeast of Nulato. Reported by Zagoskin in 1842-44 as Tlialkakat. Population in 1880 - 27.						X	
	Tok, on Koyukuk Island at the junction of Koyukuk River with the Yukon. Former Indian camp reported as Tokhakat by Zagoskin in 1844 with a population of 6.						X	
	Zakatlatan, on the north bank of the Yukon River 43 miles east of Nulato. Var. Louden. Reported in 1869. Population in 1880 - 25. Army Signal Corps post in 1903.						X	
	Zogliakten, on east bank of the Koyukuk River between Khotylkakat and Zonagoliakten, 42 miles southwest of Huslia. Koyukuk camp or settlement reported in 1844 by Zagoskin with population of 7. At or near present place of Toby's Cabin.					X		
	Zonagoliakten, on east bank of the Koyukuk River between Zogliakten and Kakhlyakhlyakakat. Former Koyukuk village reported in 1844 by Zagoskin with population of 11. Location unknown.				X			
Yukonikhotana	Their settlements were:							
	Chentansitzan, on the north bank of the Yukon 30 miles below the mouth of Melozi River. Indian camp or settlement reported by Hodge in 1907. Cited in 1898 by USGS.					X		
	Medvednaia, on south side of the Yukon--location unknown. Reported by Petroff in 1880 with population of 15.				X			
	Melozikakat[1], at mouth of Melozikakat River on Yukon River north of Ruby. Former Indian village or camp reported in the 1880 Census with population of 30. Across river from present-day Ruby[2].	X[2]					X[1]	
	Noggai, on the Yukon River near Junction with the Koyukuk River. Former village or camp reported by Zagoskin in 1844 with population of 10. Location unknown, but near present-day Koyukuk.				X			
	Tohnokalong, on the north bank of the Yukon 30 miles east-northeast of Ruby. Former Indian village reported by Hodge in 1910.						X	

NATIVE GROUP[a]	HISTORIC PLACES	EXISTING SETTLEMENT POPULATIONS 25 - 299	300 - 999	1000 +	STATUS UNKNOWN	SEASONAL CAMP SITE	ABANDONED	ANTIQUITY SITE
Ingalik[b]	Their settlements were:							
	Talitui, on Tlegon River on right bank of Innoko River opposite the mouth of Iditarod River, 25 miles east-northeast of Holikachuk. Var. Dementi. Former Ingalik village reported in 1842-44 by Zagoskin as Tallity on his map. Later boat landing and store for Ophir and Iditarod mines. Name Dementi reported in 1908.						X	
	Nowi, on the south side of Yukon River at the mouth of Nowitna River. Former Ingalik village or camp reported in 1867 by Western Union Telegraph expedition as Newicargut. Petroff reported Nowikakat in 1880 with population of 107.					X		
	Dishkakat, on south bank of Innoko River, 6 miles west of junction of Dishna River. An Ingalik Indian settlement for many years prior to first rush of prospectors to the valley in 1907. Var. Innoko, Paltchikatno.						X	
	Shageluk, present-day village on east bank of Innoko River, 20 miles east of Anvik and 34 miles northeast of Holy Cross. Var. Chageluk, Chagvagchat, Inselnostleide, Intenleiden, Khuingshtetakhten, Kuingshtetakten, Tizhgelege, Tlegogitno, Tlegoshitno, Tlegozhitno. This Ingalik village was recorded on Zagoskin's 1850 map, and several villages and camps were located in this area on an 1861 map. Ivan Petroff in the 1880 Census calls them collectively, the "Chageluk settlements."	X						
	Holikachuk, on west bank of Innoko River, 27 miles northeast of Anvik and 49 miles north of Holy Cross. Ingalik Indian village recorded in 1861. People moved to Grayling.						X	
	Anvik, on right bank of the Yukon River at the junction of the Yukon and Anvik. Glazanov found several hundred people here in January 1834.	X						
	Koserefski (or Asko) on left bank of the Yukon near the mouth of Walker Slough. First an Ikogmiut Eskimo village; later an Ingalik village--also Koyukuk. Now present-day Holy Cross.	X						
	Kvigimpainag, on the east bank of the Yukon River, 20 miles from Kvikak. Location unknown.				X			
	Vagitchitchate, near mouth of Innoko River at or near present place of Railroad City. Former Indian village or camp reported by Zagoskin in 1850. Present place Railroad City.	less						
Eskimo[c]	Their settlements in this region were:							
	Kagogagat, on the north bank of Yukon River at mouth of Medicine Creek. Former Eskimo camp reported in 1843 as Kagokhakat with a population of 9 reported by Zagoskin. Population in 1880 - 115. Location unknown.				X			
	Kaiakak, on the west bank of the Yukon below Nulato (Nulato Hills). Eskimo village with 1880 population of 134. Location unknown.				X			
	Khogltlinde, on the Yukon River. Location unknown. Former village; population in 1880 - 60.				X			
	Klamaskwaltin, on the north bank of the Yukon River near the mouth of Kaiyuh Slough. Former Eskimo camp reported in 1898.					X		
	Kunkhogliak, on the Yukon River. Location unknown. Former Eskimo camp reported in 1844 by Zagoskin--population 11.				X			
	Kutul, on the Yukon River 50 miles above Anvik. Former Eskimo camp reported in 1844 by Zagoskin as Khutulkakat.					X		
	Alatna, present place. Trading post of Marsan. Eskimo village related to mission at Allakaket.	less						

NATIVE GROUP	HISTORIC PLACES	EXISTING SETTLEMENT POPULATIONS			STATUS UNKNOWN	SEASONAL CAMP SITE	ABANDONED	ANTIQUITY SITE
		25 - 299	300 - 999	1000 +				
Eskimo (Contd)	Bolshoigor[d], on Yukon River 25 miles above the mouth of Koyukuk River. Former Eskimo camp or settlement reported by Petroff in 1880.				X			
	Hussliakatna, on the right bank of the Koyukuk River, 2 miles above the south end of Dall Island, northwest of Huslia. Former Eskimo village reported by Allen in 1885 with a population of 14. Location unknown.						X	
	Kaltat, on an island in Yukon River not far from its junction with Koyukuk River. Former Eskimo camp or village reported in 1842 as K-Khaltat by Zagoskin--population 9. Reported by Petroff in 1880. Location unknown.						X	
	Kanuti, on Koyukuk River in latitude 66°18'N. Var. Hogtza High. Former Eskimo camp or village reported by Allen in 1885 as Konootena with population of 13.					X		
	Kotil, at the junction of Kateel River with the Koyukuk River. Former Eskimo camp or village reported as Khotilkakate in 1850 on Zagoskin map and in 1880 by Petroff with population of 65.					X		
	Mentokakat, on left bank of Yukon River, 20 miles above mouth of Meloze River. Former Eskimo camp or settlement reported in 1844 as Minkhotliatno by Zagoskin with a population of 46. Population in 1880 - 20. (This is probably a Koyukuk site opposite Horner Hot Springs rather than Eskimo).				X			
Tanana	Their settlements in this region were:							
	Tozikakat, north bank of the Yukon at the mouth of Tozi River. Former Indian village reported by Petroff in 1880 census. Now a region of several fish camps.					X		
	Tuklukyet, on the north bank of the Yukon at the mouth of Grant Creek, 24 miles west of Tanana about 15 miles below Nuklukayet. Mining camp of Grant Creek in 1911. Former Indian village reported by Baker in 1906.					X		

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[a] The Jesuit Mission established here in 1886 gradually influenced a population change to include a greater proportion of Ingalik Indians. Area used by Eskimos, Koyukuk, and Ingalik.

[b] The Ingalik of the region include three sub-groups according to Osgood (1934): the Anvik-Shakeluk group, the Bonasila group, and the Holy Cross-Georgetown group--each located in the vicinity of villages of those names.

[c] Eskimo intrusion into the region was by the Ikogmiut up the lower Yukon, by Unaligmiut to Yukon River region around the junction with the Koyukuk and Malemiut, Kowagmiut and Nunatagmiut groups into the Upper Koyukuk basin.

[d] Reference believed doubtful; would place Bolshoigor very near Koyukuk village of Notaloton, present-day Galena.

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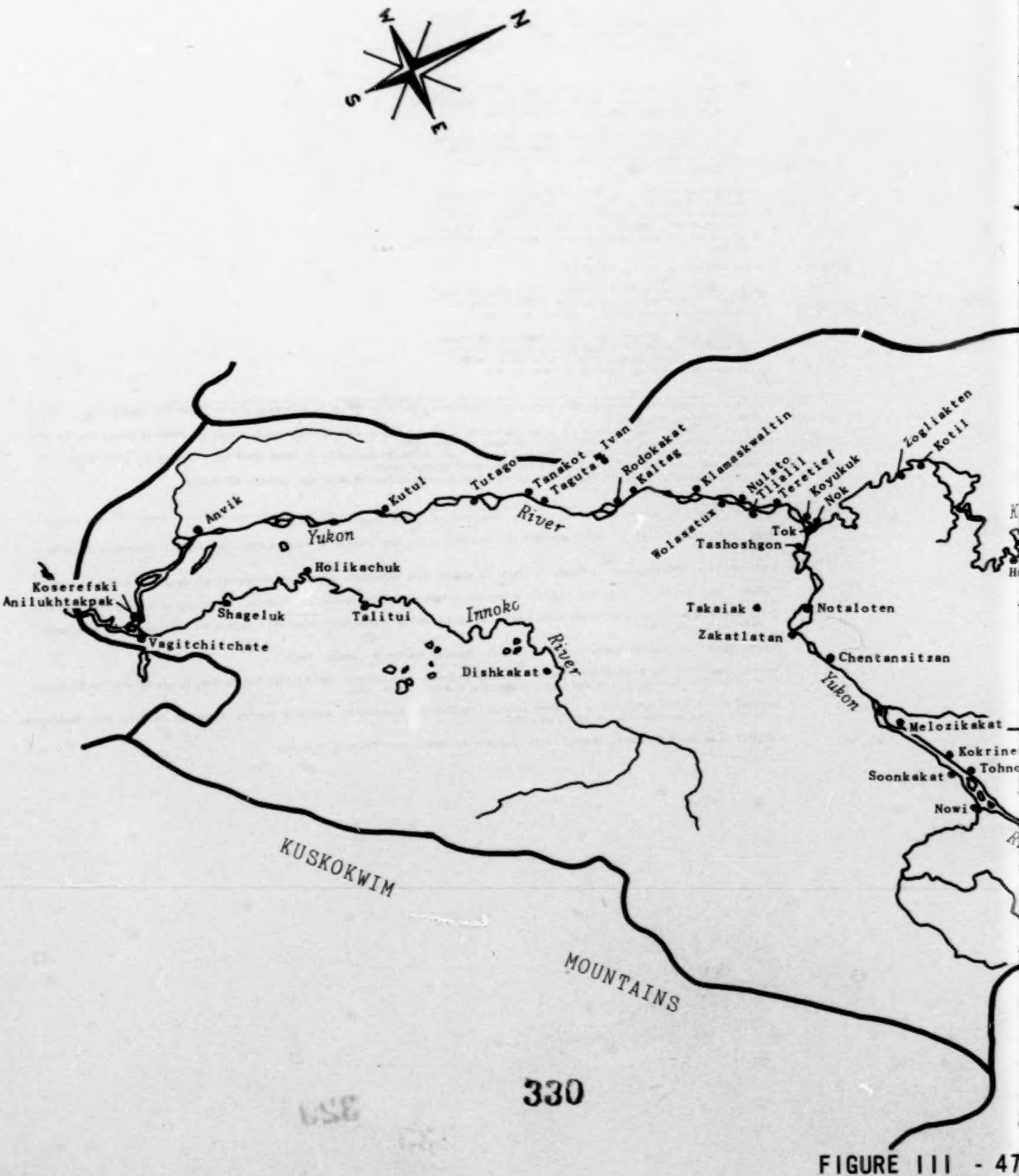
Compilation by David M. Hickok, Federal Field Committee for Development Planning in Alaska.



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Melozikakat
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Tohno
Soonkakat
Nowi
KUSKOKWIM
MOUNTAINS

FIGURE III - 47

HISTORIC NATIVE PLACES
KOYUKUK-LOWER YUKON REGION

Compiled for:

Alaska Natives & The Land

by the

FEDERAL FIELD COMMITTEE
FOR DEVELOPMENT PLANNING IN ALASKA

From all authoritative sources

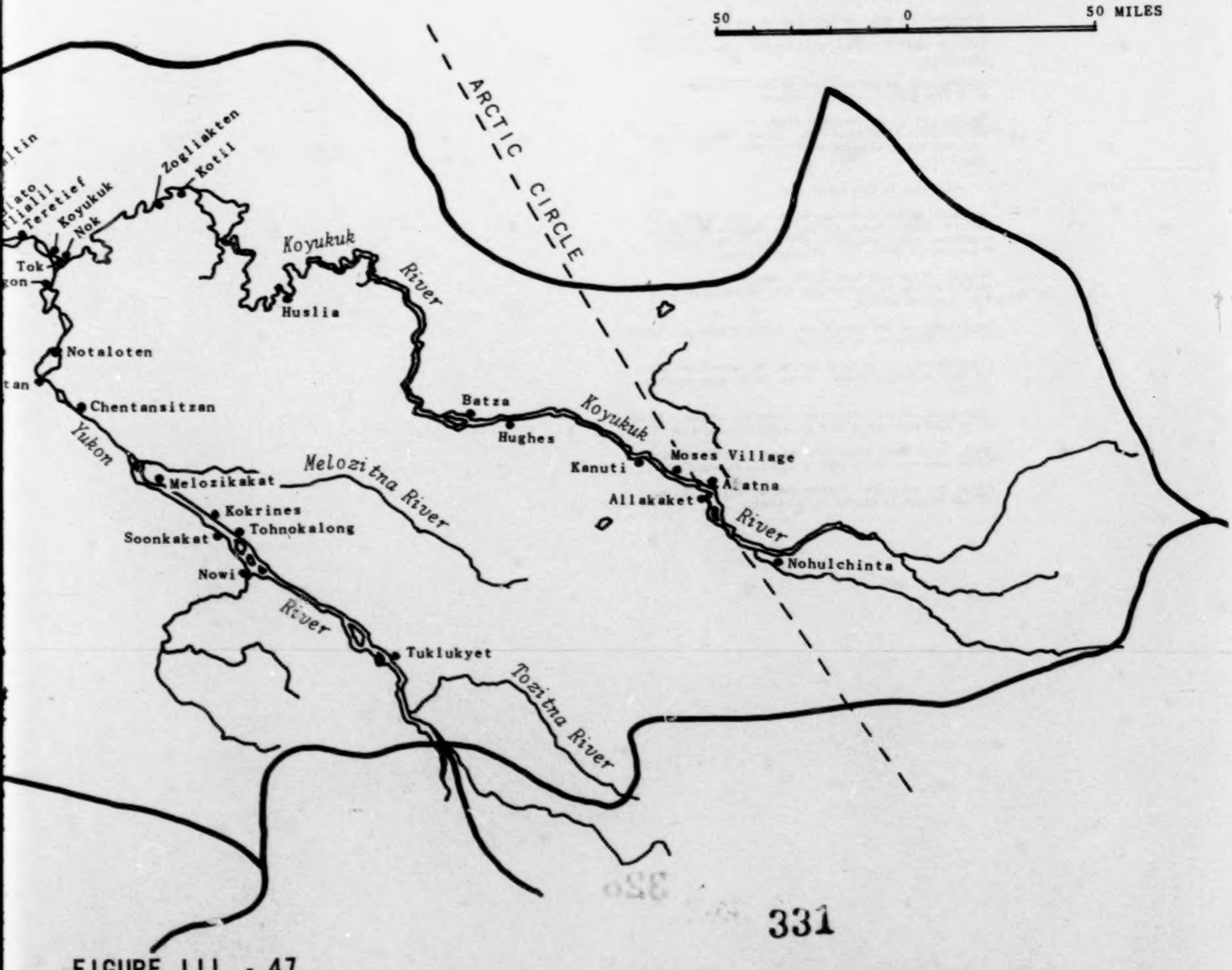
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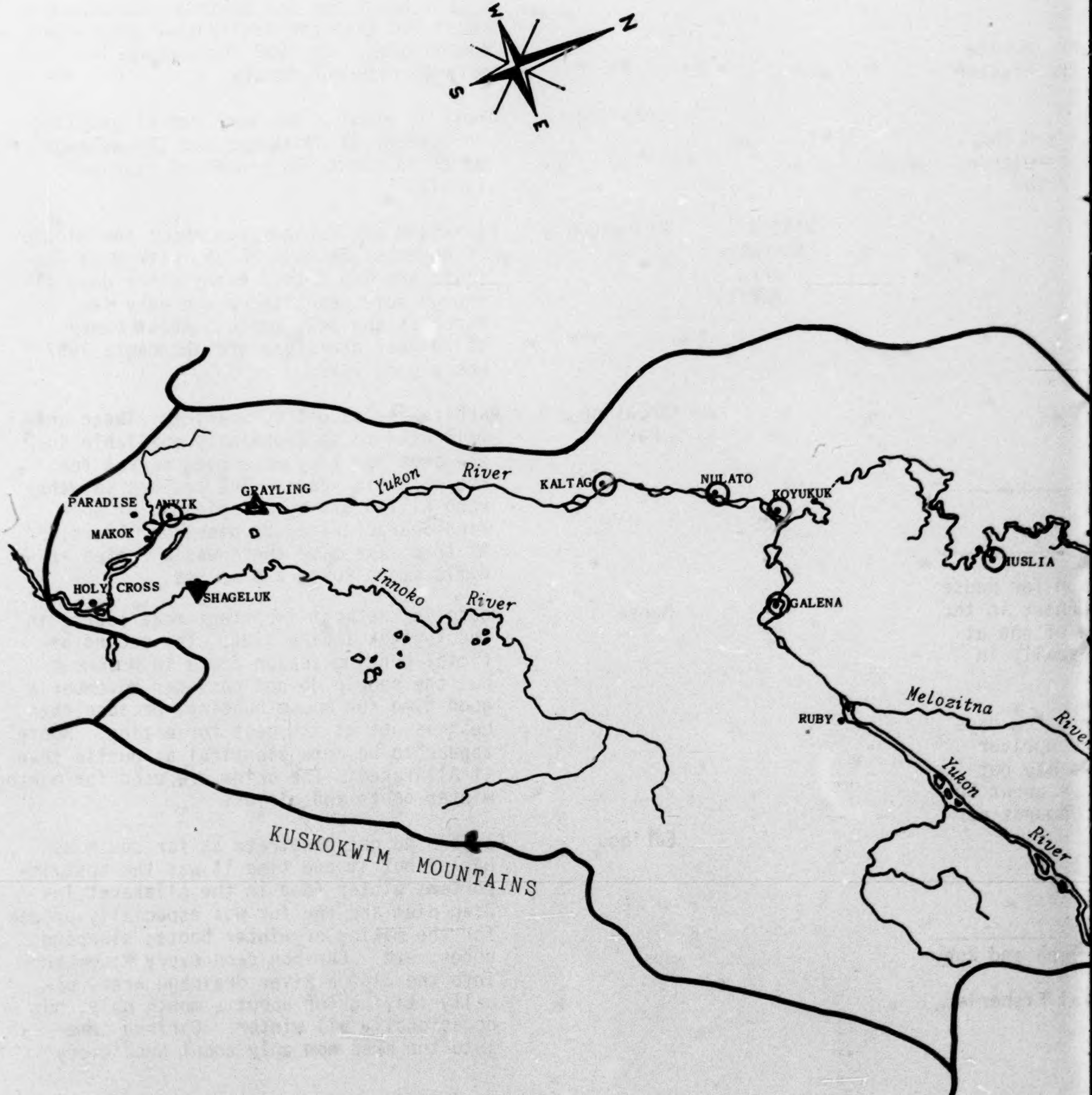
FIGURE III - 47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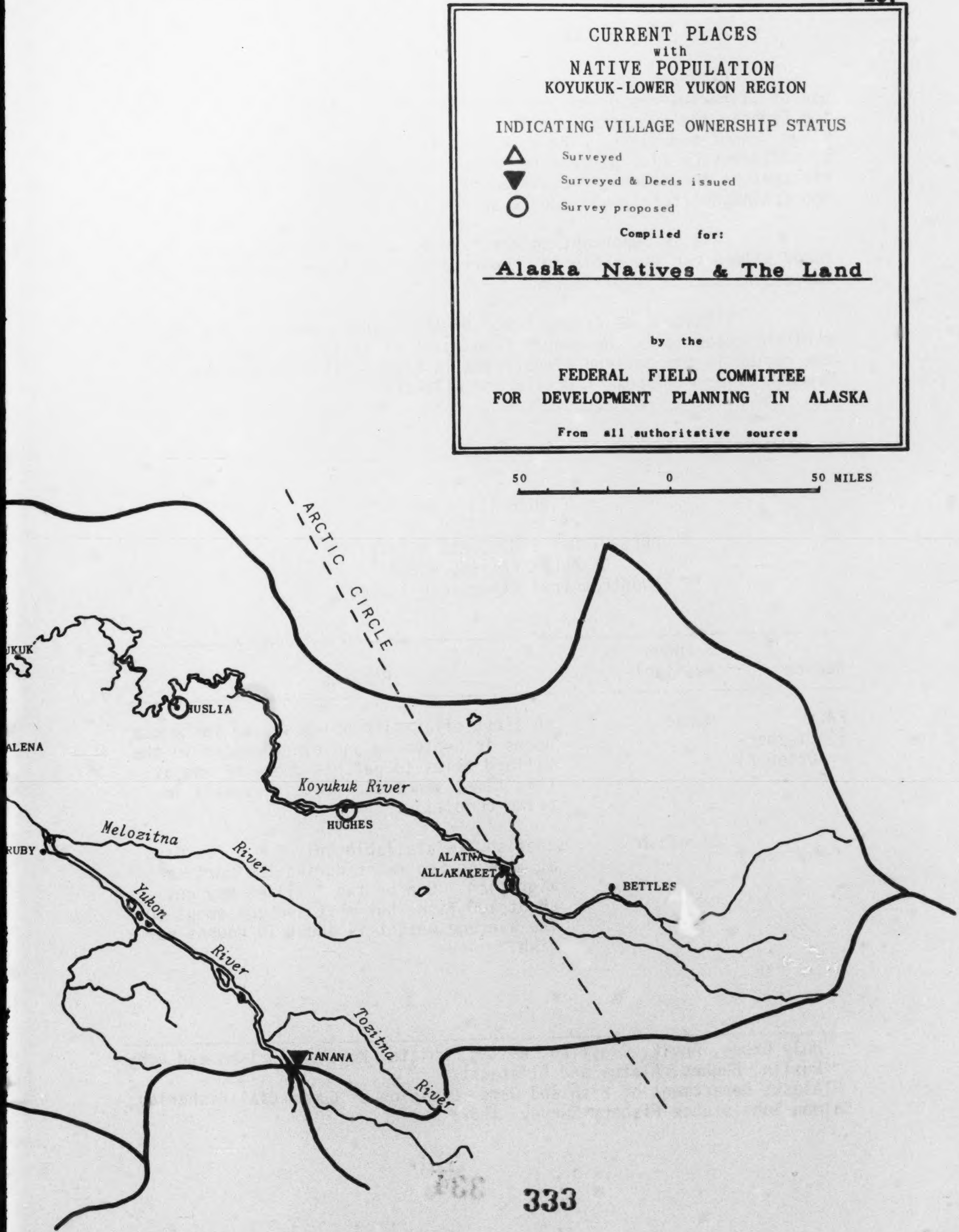
GALENA
RUBY
Melozitna River
Yukon River
KUSKOKWIM MOUNTAINS

FIGURE III - 48



CURRENT PLACES
with
NATIVE POPULATION
KOYUKUK-LOWER YUKON REGION

INDICATING VILLAGE OWNERSHIP STATUS

△ Surveyed
▼ Surveyed & Deeds issued
○ Survey proposed

Compiled for:

Alaska Natives & The Land

by the

FEDERAL FIELD COMMITTEE
FOR DEVELOPMENT PLANNING IN ALASKA

From all authoritative sources

50
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50 MILES
ARCTIC CIRCLE
UKUK
HUSLIA
ALENA
Koyukuk River
HUGHES
Melozitna River
RUBY
Yukon River
ALATNA
ALLAKAKEET
BETTLES
Tozitna River
TANANA

GURE III - 48

Villages along the Yukon, Innoko and Koyukuk make extensive use of fisheries resources. Within the entire Yukon drainage, including Canada, the subsistence catch of salmon in 1967 totalled 294,343 kings, chums and pinks. The eight Native villages of the Yukon's main stem[57] harvested 47.1 percent of this total and together with the four villages on the Koyukuk[58] harvested 52.3 percent, or 154,253 salmon of the drainages' total subsistence salmon take.[59]

This is important to note since, unlike the Kuskokwim, the Yukon salmon run is unable to support any significant commercial take above subsistence requirements.

Illustrative of the place of the fishery resource and the wildlife resource in the annual food quest of Native villages within the region is the pattern illustrated in Figure III - 49 for the Koyukuk River villages of Huslia and Allakaket.

FIGURE III - 49

PRESENT DAY FOOD QUEST ACTIVITIES
OF ALLAKAKET AND HUSLIA
(Northcentral Athapascan Indian)

Season	Foods Available	Remarks
FALL (September-October)	Moose	The first official hunting season for moose opens in September and every hunter in the village tries to get his quota of one at this time, since the meat is usually in prime condition.
	Sheefish	Sheefish are available only for a few days at most in September during the upriver migration. One or two families may get about 100 fish, but most average about 30. The average weight is about 10 pounds per fish.

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[57] Holy Cross, Anvik, Grayling, Kaltag, Nulato, Koyukuk, Galena and Ruby

[58] Huslia, Hughes, Alatna and Allakaket

[59] Alaska Department of Fish and Game, Division of Commercial Fisheries, Salmon Subsistence Fishery Survey, 1967.

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Season	Foods Available	Remarks
	Whitefish	Whitefish are usually plentiful in October. They are caught by netting through the ice. A good catch for the month at Allakaket is about 100 fish per family averaging eight pounds each. In 1958 the average was only 40 fish per family.
	Grayling	There is about a two week run of grayling in October at Allakaket and the average catch is about 150 pounds of fish per family.
WINTER (November thru April)	Ptarmigan	Ptarmigan are hunted from about the middle of November through March, with most families snaring 1 to 2 every other day, although some years there are very few. March is the best month. About every third year ptarmigan are abundant; 1957 was a good year.
	Snowshoe Hare	Rabbits are caught by snaring. These animals used to be abundantly available in the area but they have been scarce for the past six years. The Indians say they were killed off by an epidemic of some kind characterized by diseased livers. At this same time there was a rabies epidemic among foxes and wolves.
	Moose	Moose is the most important meat source in the Koyukuk Indian diet. The second official hunting season opens in November but the people do not consider November a good time for moose hunting, because the meat is not at its best for eating. Moose appear to be more plentiful at Huslia than at Allakaket. The skins are used for making winter boots and gloves.
	Caribou	Caribou do not penetrate as far south as Huslia but at one time it was the most important winter food in the Allakaket Indian diet and the fur was especially prized for the making of winter boots, sleeping robes, etc. Caribou came every November into the Alatna River drainage area, usually staying for about a month only, but occasionally all winter. Caribou come into the area now only about once every

Season	Foods Available	Remarks
	Caribou Contd.	three years. In 1957 they were plentiful; none came into the area in 1958; only a few in 1962; but they appeared in good numbers again in the winter of 1963-64.
	Mink Marten Otter Lynx Fox	The trapping season for these animals opens about mid-November. Mink and marten are the most readily available and the sale of their furs is an important source of income. In the early days the meat of mink and otter was used as human food but this is no longer a common practice. In 1957 the highest amount--and for one family only--obtained from the sale of mink and marten at Allakaket was $500; three or four families realized $300 to $400 but several made only $30 to $40 for the season. Trapping returns are usually higher at Huslia.
	Ling Cod	At Allakaket ling cod are caught from late November through January using traps made of spruce set under the ice after it is sufficiently set, usually by the end of November. When the first run of fish begins, about 300 fish are taken every two days for about one week, then only about 50 every other day for awhile, and then the catch further declines.
	Beaver	Beaver are trapped from about February 1st through March 31st. Beaver pelts are the most important income source for these people. The maximum allowance of 25 per individual trapper is caught most years. When the price is good, 25 skins may average $500 gross income. The meat is a very important food item.
	Muskrats	Muskrats are available in the area and the trapping season opens about January 1st. However, at this time it is usually too cold for trapping--the thermometer sometimes drops to -68° F.--and the price for muskrat skins is now so low that it doesn't warrant the effort required to trap them unless there is a food shortage. Later in the season, when the temperature moderates they are caught and used to enhance the meat supply.

Season
SPRING (May and June)
SUMMER (July and August)

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Season	Foods Available	Remarks
SPRING (May and June)		April and May are not good months for travelling in this area. It is usually too soft under foot and the rivers are not yet open for boat travel.
	Porcupine	Porcupine used to be abundantly available and were used the year round. They were at their fattest and best from about April to August. Twenty-five or more years ago they were very plentiful in the Allakaket area, but apparently at that time some disaster wiped them out. Nowadays only about four or five animals a year are taken for the entire village. There is some indication that during the last year or two they have begun to increase.
	Ducks Geese	Huslia is on the wildfowl route and ducks and geese in limited amounts usually appear on the spring dietary. This village is not located near a major wildfowl nesting area as is Allakaket, so neither the birds nor their eggs are major foods.
	Pike Sucker Whitefish	During the latter part of May there is some fishing for pike, sucker and whitefish, but usually just enough are caught at a time for a meal or two.
	Rhubarb (Polygonum alaskanum)	Wild rhubarb is available in prime edible stage only for about one week during the first part of June. There is not enough available to put up for winter use.
SUMMER (July and August)		During June and early July very few native foods are available. This is the traditional "hungry time" of the past.
	Salmon King Silver Dog	The salmon run begins approximately July 20th. First a few kings and then a few silver salmon are taken, followed by a more prolific run of dog salmon, but the run varies widely from year to year. In a good year at Allakaket the average family expects to catch 500 to 700 salmon, but only during three summers in the past fifteen years has the catch been this good. Most of the salmon is used for human food.

Season	Foods Available	Remarks
	Black Bear Berries Rose Hips	Black bear are usually hunted during the last part of August. About 20 are taken per year for the entire village at Allakaket. Blueberries and low-bush cranberries are available in moderate amounts in the area. Only small amounts are stored for winter use.
	Wildfowl	Summer has always been the best as well as the traditional time for getting wildfowl and their eggs at Allakaket. A family would average at least 100 or more birds per season. The present take is considerably less than this because wage employment extends well into the fall season.

Source: Heller and Scott, *The Alaska Dietary Survey 1956-1961, op.cit.*, pp. 243-246.

These patterns for Huslia and Allakaket on the Koyukuk River are, of course, only illustrative of patterns in other regional places on the Yukon and Innoko Rivers. Seasonal dates of fish and wildlife availability vary, as do relative species abundance and the degree of subsistence requirements in relation to cash income.

Hunting and trapping ranges of the region average about a forty-mile radius around each Native village.[60] Berries are harvested in a ten-mile radius.[61]

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[60] Bureau of Indian Affairs, Annual Survey of Native Foods, 1967 reports.
[61] *Ibid.*

UPPER YUKON-PORCUPINE REGION

Ethnic Settlement Patterns

The Upper Yukon-Porcupine region includes the historically identifiable territory of the Kutchin (people), "A group of Athapascan tribes in Alaska and British North America inhabiting the region on the Yukon and its tributaries above Nuklukayet (junction of Tanana and Yukon Rivers[62], the Peel River Basin and the lower Mackenzie valley."[63]

Within Alaska the Kutchin are believed to be now represented by decendants of five tribal sub-groups[64]-the Kutchakutchin (people of the Yukon Flats region), the Hankutchin (people of the upper Yukon region), the Natsitkutchin (people of the Chandalar River region), the Vuntakutchin (people of the Crow River region), and the Tranjikkutchin (people of the Black River). Two other Kutchin tribes, the Tennuthkutchin (people of Birch Creek) and the Tatsakutchin (Rampart people), formerly within Alaska are now extinct.[65] Additionally, for the practical purpose of this report, we can merge the Vuntakutchin with the Natsitkutchin and the Tranjikkutchin with the Kutchakutchin.

The physiographic sections of Alaska occupied and used by these Kutchin groups center around the Yukon Flats and extend to all parts of the basin including major parts or all of the physiographic sections of the region earlier discussed.

Historically, the Kutchakutchin were the largest of the groups and occupied the central part of the region. The Hankutchin lived on the upper Yukon and in adjacent Canada; the Natsitkutchin occupied the Chandalar River reaches from the outer periphery of the Yukon Flats through the Porcupine Plateau and northward into the Romanzof Mountains of the Brooks Range. The Vuntakutchin similarly ranged north of the Porcupine to the Romanzof and toward the Mackenzie Delta; and the Tranjikkutchin essentially occupied the upper reaches of the Black River above the Yukon Flats.

Territorial interchange and mixing by the Kutchin groups has been accelerated since World War II and, more particularly, since Statehood, but major tribal ranges are still identifiable. For purposes of this analysis, three Kutchin groups are cited.

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[62] Donald J. Orth, *Dictionary of Alaska Place Names*. Geological Survey Professional Paper 567. Washington: United States Government Printing Office, 1967.

[63] Frederick Webb Hodge (ed.), Part I and Part II; *Handbook of American Indians North of Mexico*. Washington: Government Printing Office, 1907.

[64] Cornelius Osgood, "Contributions to The Ethnography of The Kutchin," *Yale University Publications in Anthropology*, No. 14. London: Humphrey Milford, Oxford University Press, 1936.

[65] *Ibid.*

... *Kutchakutchin* ('giant people'): These people historically inhabited both banks of the Yukon and the Porcupine Rivers--primarily within the Yukon Flats but as far down toward the middle Yukon as Senati (below Rampart Rapids).

Today Kutchakutchin villages of historic record which are now occupied include: Stevens Village, Beaver, Birch Creek, Circle, and Fort Yukon. Fort Yukon, at the confluence of the Yukon and Porcupine, was a trading center and mixing ground for other Kutchin groups as well as occasional Tanana people.

Canyon Village on the Porcupine is of recent origin[66] (1966), having been settled by Fort Yukon people, but is located near an older village site of the Vuntakutchin, Burnt Paw, in Howling Dog Canyon. Quite likely both ethnic backgrounds--Kutchakutchin and Vuntakutchin--are represented at the present time.

The Native population of Circle is identified as Kutchakutchin but appears to have ethnic origins primarily from the Hankutchin groups of the upper Yukon.[67]

Chalkyitsik on the Black River historically may be associated with the Tranjikkutchin (Black River people), but some interchange doubtless has occurred.

These people historically were principally hunters and traders, making little for themselves and depending upon trade for utensils and other accoutrements.[68]

... *Hankutchin* ('river people'): This Kutchin group historically inhabited the upper Yukon below the Klondike River. In Alaska they lived primarily between the Canada-Alaska border and the upper reaches of the Yukon Flats near Circle.[69]

The only Hankutchin village of historic record whose population may be said to be continuous is present-day Eagle. However, the original Native village, Johnny's or John's Village, existed a few miles downstream from the present location of Eagle before the development of the mining camp at the Eagle location.

Other historic Hankutchin villages included Tadush, or Charley's Village at the confluence of the Yukon and the Klondike, and Fetulin and Tutchonekutchin whose precise upper Yukon location is unknown.[70] Charley's Village was destroyed in the ice breakup of 1914, and its residents moved to Circle.[71]

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[66] Orth, *op.cit.*

[67] *Ibid.*

[68] Hodge, *op.cit.*

[69] *Ibid.*

[70] *Ibid.*

[71] Orth, *op.cit.*

The Hankutchin were noted for their skill in catching large salmon and their basketry which were objects of considerable trade attraction.[72]

The Hankutchin living around Eagle are called the Katshickotin and are related to groups just over the Canadian border.[73]

... *Natsitkutchin* ('strong people'): This tribe inhabited the country from the Porcupine River northward to the Romanzof Mountains of Alaska's Brooks Range. One historic reference indicates that their habitat began in a mountainous region from 50 to 100 miles north of Fort Yukon.[74]

These people historically were a shifting, semi-nomadic people, similar to the Nuunamiut Eskimo in their food quest habits, hunting the caribou occasionally as far as the seacoast of the Beaufort Sea. They were chiefly known for their trading with the coastal Eskimo of the Barter and Herchel Island region. The strong babiche (cord, rawhide) that they made was valuable as trade with the coastal Eskimo people. The Eskimo also highly valued wolverine skins for parka hood trim. In turn the Kutchin received oil and seal skin.

Natsitkutchin villages of today include Venetie and Arctic Village. Venetie was settled about 1900 and is mainly Natsitkutchin although some ancestors may be Teachinkutchin ('people of the lower country'), a sub-group of the Natsitkutchin originally living northwest of the latter along the Old Crow Plain region to the Arctic Coast of Canada. Also it is quite logical to assume ties between the Natsitkutchin and the Vuntakutchin (Crow River) since the habitat and subsistence patterns of both groups were historically similar,[75] and present government statistics of both places indicate this geographical association as well as ties with people along the Porcupine River.[76]

In summary then we see the historic patterns merging with current ethnography for the Kutchin as follows:

... The Natsitkutchin--the Chandalar and Crow River Kutchin--occupied and used the country north of the Yukon Flats and Porcupine River into the Brooks Range and Romanzof Mountains.

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[72] Hodge, *op. cit.*

[73] Don Charles Foote and Sheila K. MacBain, *A Selected Regional Bibliography for Human Geographical Studies of the Native Populations in Central Alaska*. Geography Department Publication No. 12. McGill University, Montreal, June 1964.

[74] Hodge, *op. cit.*

[75] Osgood, *op. cit.*

[76] Bureau of Indian Affairs, Venetie Statistics, 1967.

> ... The Kutchakutchin used and occupied the Yukon Flats and its montaine peripheries and the Rampart Trough as far down as the confluence of the Yukon and the Tanana.
>
> ... The Hankutchin used the upper reaches of the Yukon in Alaska and as far as the Klondike in the Yukon Territory. Essentially a river people by occupancy, they nevertheless used peripheral uplands to provide subsistence needs.

The territory of all the Kutchin people has always been sparsely populated in accordance with the biological carrying capacities of the region. As in the Koyukuk-Lower Yukon region, village locations were on the main rivers and streams. These places acted as base occupation centers and were complementary to many family and group fish campsites along the rivers and interior hunting and trapping camps.

> The Peel River [the Kutchin] people acknowledge a limited ownership of fishing and hunting territories. For example, the right to fishing trap sites is held over from one year to the next. If the owner does not occupy the site during the season, it may then be taken over and retained by another. Further, the occupation of a certain hunting territory for a long period of time by one family, gives them certain rights. If they leave this area, it may be taken over by another family but the previous occupants may return at any time, which act, however, does not dispossess the newcomers. The occupants of a hunting ground may take along another family as guests if they think the game is sufficiently plentiful.[77]

The forces of village change were largely due to natural phenomena such as the flooding of Charley's Village, but the advent of the white man, particularly in the Gold Rush days, produced change such as the movement of Johnny's Village to the mining camp of Eagle. Although there were warfare incidents with both Eskimo groups and between Kutchin groups of Canada and Alaska, causes generally arose out of trade or personal differences, and there is no evidence of territorial expansion due to war.

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[77] Osgood, *op. cit.*

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[78] *Ibid.*
[79] *Ibid.*
[80] *Ibid.*

Additionally, as happened at the time of first white-aboriginal contact in several areas of Alaska, epidemic disease outbreaks decimated village populations in the region. In two cases whole sub-ethnic groups were wiped out by the scarlet fever epidemic of 1863. In this epidemic the Birch Creek (Tennuthkutchin) and the Rampart people (Tatakutchin)--those who lived at Nuklukayet and at Senati--were annihiliated.[78]

Figures III - 50, 51 and 52 show transition from historic places of Native occupancy to current village status.

Environmental Livelihood Patterns

The livelihood patterns of the Kutchin groups vary depending upon game habitats--according to the change between river flats, arctic prairie plateaus or mountainous regions. The relatively small aboriginal population (1274 according to the Hudson's Bay Company's census of 1858)[79] was widely scattered along the Yukon, Porcupine, Chandalar and other main streams. Their villages were small in order to effectively utilize low wildlife populations.

Northern groups lived much in the same manner as the interior Eskimo (Nuunamiut). Like the Nuunamiut, they engaged in trade with the coastal Eskimo, but primarily with the Thule culture Eskimo between Barter Island and the Mackenzie delta.

The groups of Kutchin along the river bottoms depended mainly on fish, moose, hare, small furbearing mammals and birds--particularly waterfowl--for their existence.

The first European to contact the Kutchin people was Sir Alexander Mackenzie in 1789 in his explorations of the Canadian river now bearing his name.[80] About 1810 a fur trade post was established on the lower Mackenzie at Old Fort Good Hope. In 1847 Fort Yukon was established by Alexander Murray for the Hudson's Bay Company. In order to obtain greater efficiency in the harvest of furs, the Company introduced axes, guns and metal containers as well as the usual trade beads. The effect was immediate change in material culture.

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[78] *Ibid.*

[79] *Ibid.*

[80] *Ibid.*

FIGURE III - 50

HISTORIC NATIVE PLACES AND CURRENT STATUS

UPPER YUKON-PORCUPINE REGION

NATIVE GROUP	HISTORIC PLACES	EXISTING SETTLEMENT POPULATIONS			STATUS UNKNOWN	SEASONAL CAMP SITE	ABANDONED	ANTIQUITY SITE
		25 - 299	300 - 999	1000 +				
Kutchakutchin	Using and occupying the Yukon Flats and its montane peripheries and the Rampart Trough as far down as the confluence of the Yukon and the Tanana, their settlements were:							
	Stevens Village, on the north bank of the Yukon River, 5 miles east of Dall River. Var. Denyeet, Shaman. Reported as early as 1898. Present place.	X						
	Beaver, on north bank of the Yukon, 17 miles northeast of mouth of Beaver Creek. Originally established about 1906. Present place.	X						
	Birch Creek, on right bank of Lower Mouth Birch Creek, 26 miles southwest of Fort Yukon. Present place.	X						
	Circle, on left bank of the Yukon, 130 miles northeast of Fairbanks. First referenced 1887 when settled as trading post. Also identified with the Hankutchin. Present place.	X						
	Fort Yukon, on right bank of the Yukon River at its junction with Porcupine River. Trading post established here in 1847. Population in 1880 - 107. Present place.		X					
	Burnt Paw1) on the Porcupine in Howling Dog Canyon. Canyon Village2) is a present place near the Burnt Paw site.	X2)					X1)	
	Christian, on right bank of the Christian River, 55 miles north of Fort Yukon. This is a present Indian Village.	less						
	White Eye, on right bank of the Yukon, 46 miles southwest of Fort Yukon. This Indian settlement was first reported in 1898.					X		
	Dahteh, on left bank of the Black River, 22 miles east of Chalkyitsik. An existing fish camp.					X		
	Salmon or Salmon Village, two miles north of junction of the Black River with its Salmon Fork, 35 miles southeast of Chalkyitsik. An existing Indian fish camp.					X		
	Rampart, on south bank of the Yukon River, 61 miles east-northeast of Tanana. Present place.	X						
	Nuklukayet, site of present-day Tanana. These Kutchakutchin people (subdivision: Tatsakutchin) were wiped out by a Scarlet Fever epidemic in 1863. Present place Tanana.		X					
	Senati, on right bank of Yukon River below Rampart Rapids. Former camp or village reported in 1869.						X	X
	Chalkyitsik, on left bank of the Black River, 4 miles north of Ohtig Lake. Var. Fishhook, Julkitsik. Present place.	X						
Hankutchin	Using the upper reaches of the Yukon in Alaska and as far as the Klondike in the Yukon Territory, they were essentially a river people by occupancy, but they nevertheless used peripheral uplands to provide subsistence needs. Their settlements were:							
	Eagle, on left bank of the Yukon River at mouth of Mission Creek, 6 miles west of the Canada-Alaska border. Trading station established here in 1874. Population in 1898 - 800. These Hankutchin are called Katshickotin and related to groups just over the Canadian border. Present place. The original Native village of Johnny's or John's Village existed a few miles downstream from present location of Eagle.	X						
	Charley Village, on right bank of Yukon River at mouth of Kandik River. Var. Tadush. First reported in 1883. After flooding in 1914 the Natives moved to Circle.					X		
	Fetutlin, on upper Yukon River. Var. Fetoulin. Former camp or settlement listed by Petroff in 1880 Census with population of 106. Location unknown.				X			
	Tutchonekutchin, location unknown.				X			
	Johnny's Village, on left bank of Yukon River below present-day Eagle. People of this village moved to Eagle.					X		

NATIVE GROUP

Natsitkutchin

Sources:

ANDONED	ANTIQUITY SITE
x1)	
X	X

NATIVE GROUP	HISTORIC PLACES	EXISTING SETTLEMENT POPULATIONS 25 - 299	300 - 999	1000 +	STATUS UNKNOWN	SEASONAL CAMP SITE	ABANDONED	ANTIQUITY SITE
Natsitkutchin	These Chandalar and Crow River Kutchin people occupied and used the country north of the Yukon Flats and Porcupine River clear into the Brooks Range and Romanzof Mountains. Their settlements were:							
	Venetie, 41 miles southwest of Christian, Yukon Flats. Present place.	X						
	Arctic Village, east bank of East Fork Chandalar River, six miles southwest of junction of Junjik River. Reported in 1926. Present place.	X						

Sources: Giddings, J. Louis. *Ancient Men of The Arctic.* New York: Alfred A. Knopf, 1967.

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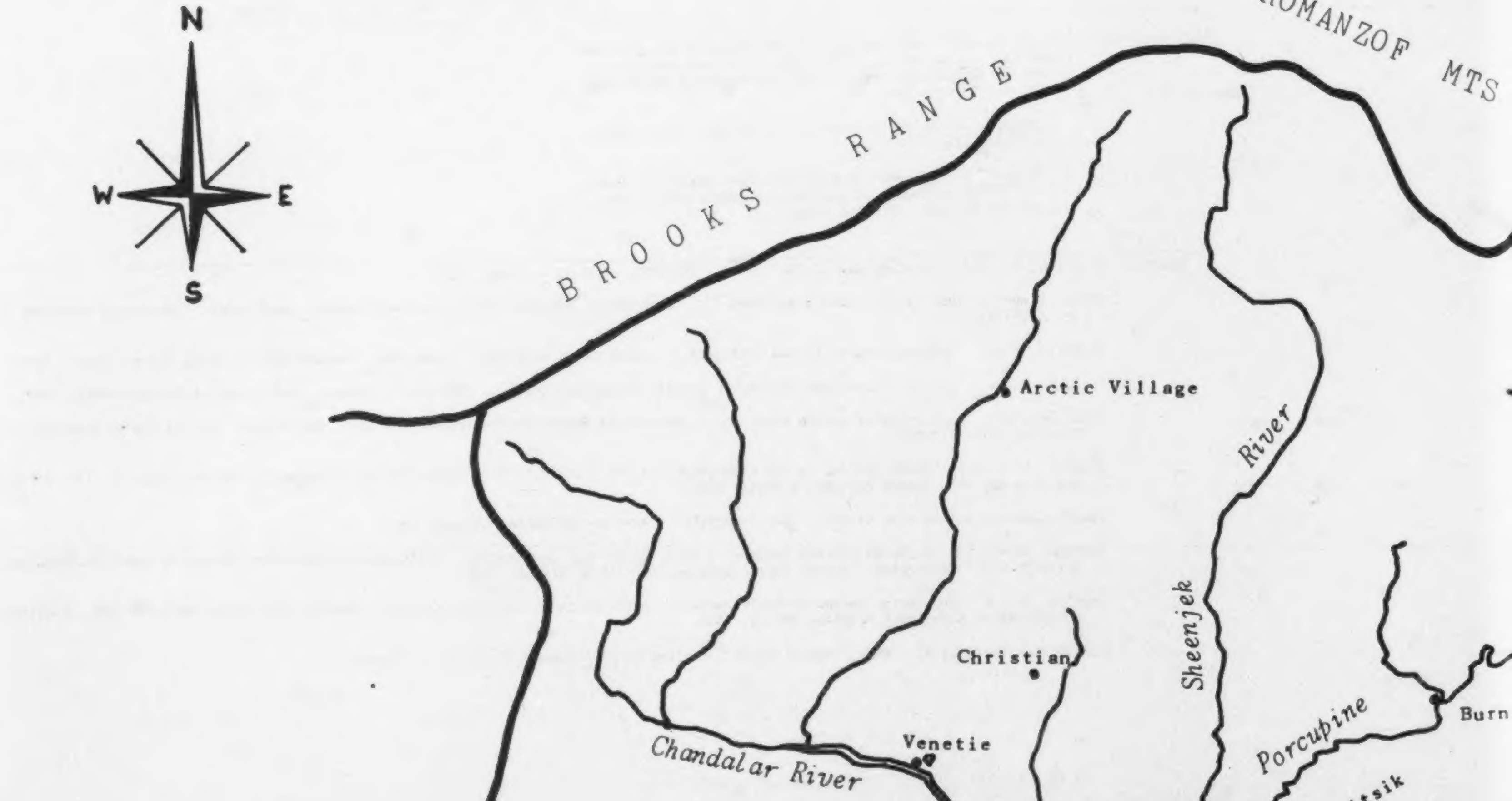
Compilation by David M. Hickok, Federal Field Committee for Development Planning in Alaska.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White Eye
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Birch Creek
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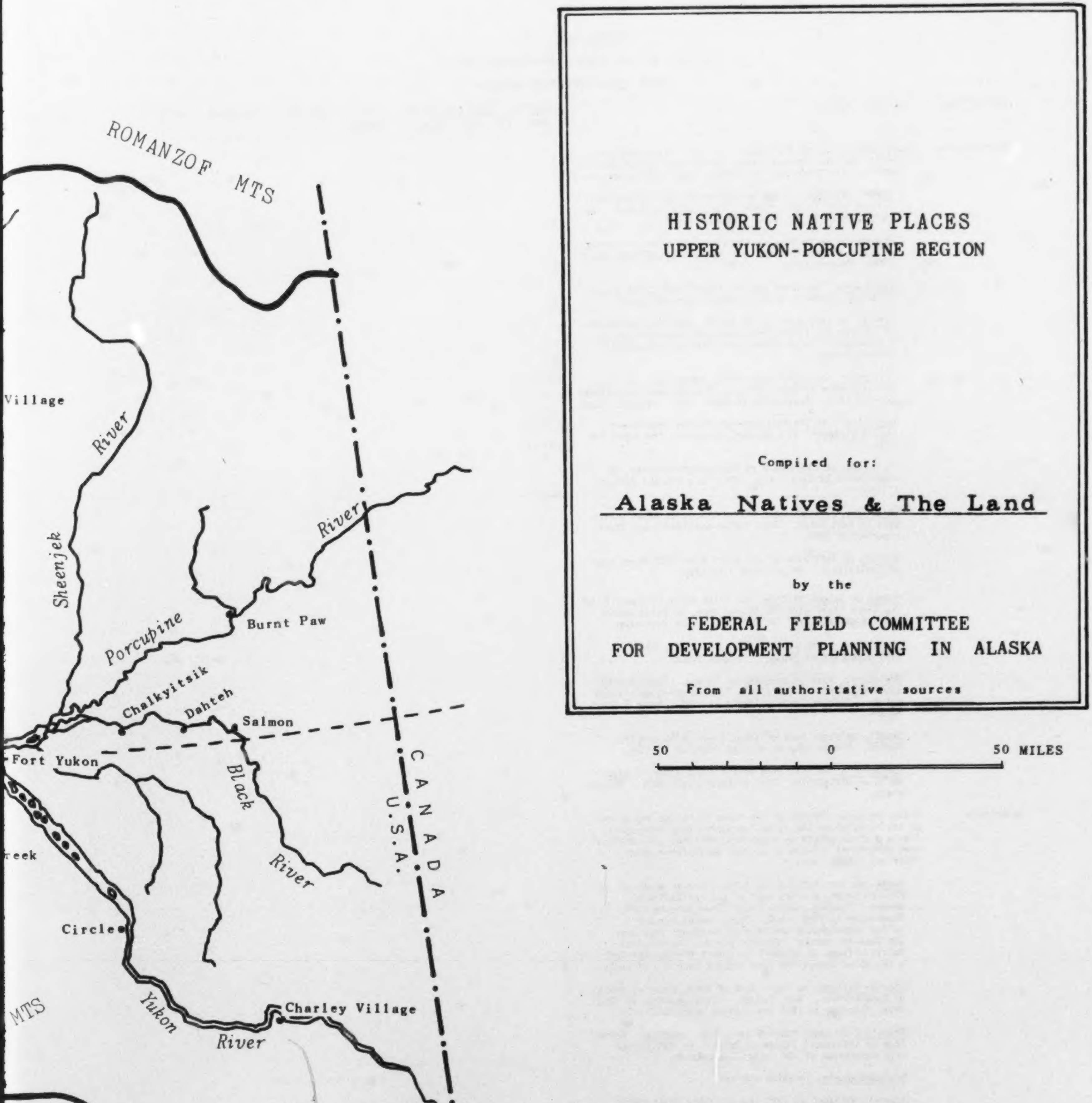
Senati
Nuklukayet

FIGURE III - 51



HISTORIC NATIVE PLACES
UPPER YUKON-PORCUPINE REGION

Compiled for:

Alaska Natives & The Land

by the

FEDERAL FIELD COMMITTEE
FOR DEVELOPMENT PLANNING IN ALASKA

From all authoritative sources

ROMANZOF MTS
Village
River
Sheenjek
River
Burnt Paw
Porcupine
Chalkyitsik
Dahteh
Salmon
Fort Yukon
Black
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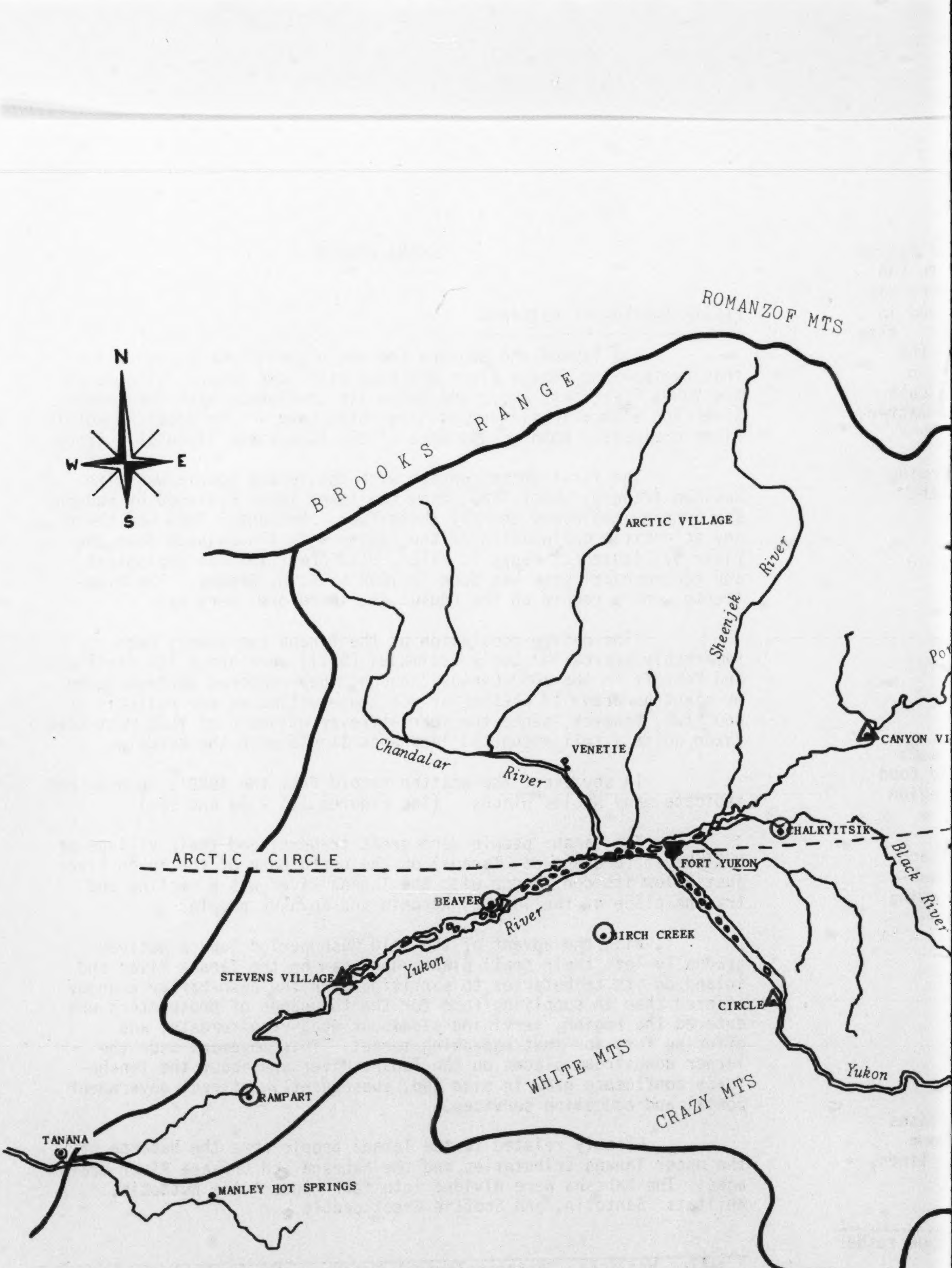
FIGURE III - 51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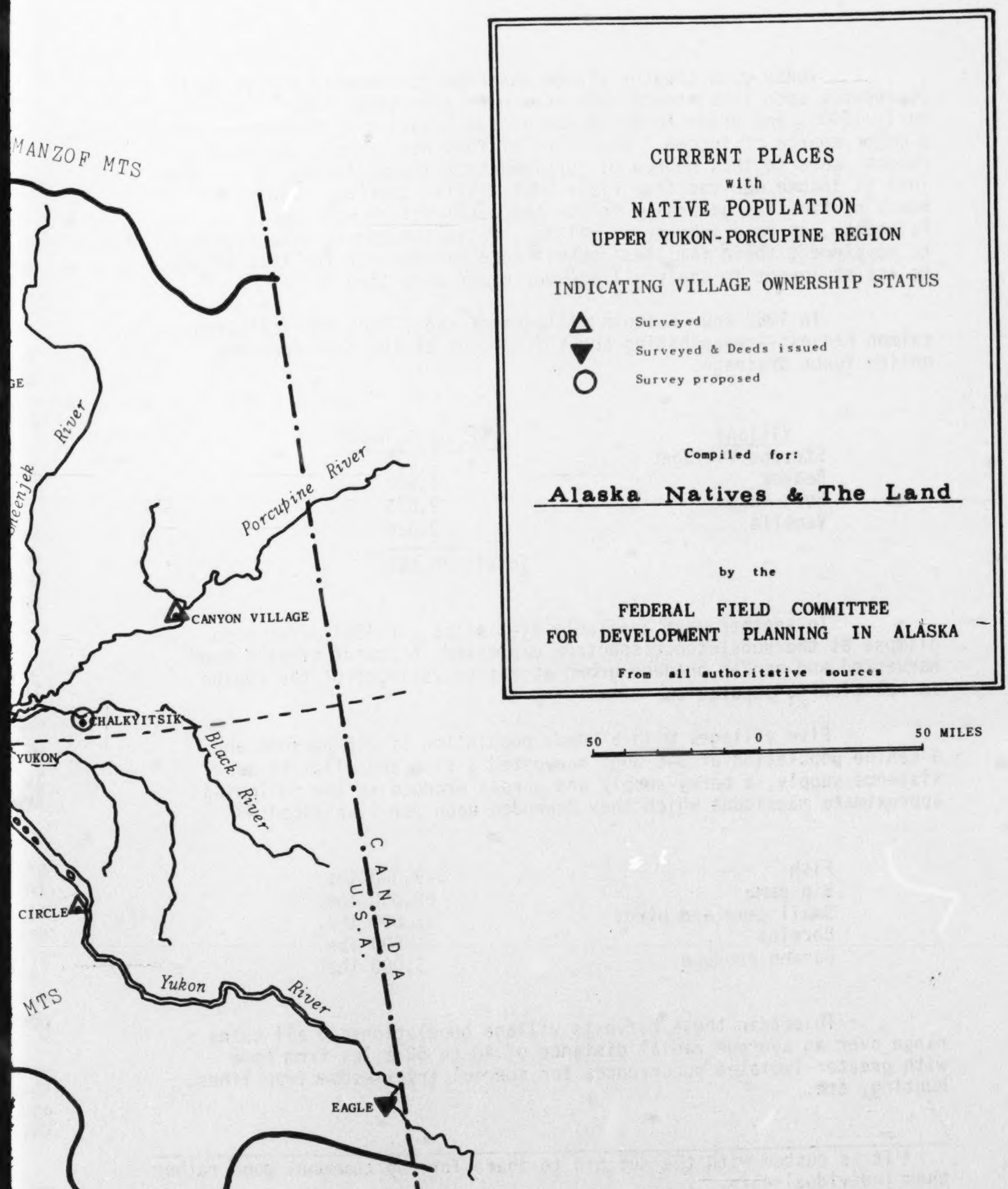
MANLEY HOT SPRINGS

FIGURE III - 52



CURRENT PLACES
with
NATIVE POPULATION
UPPER YUKON-PORCUPINE REGION

INDICATING VILLAGE OWNERSHIP STATUS

△ Surveyed
▼ Surveyed & Deeds issued
○ Survey proposed

Compiled for:

Alaska Natives & The Land

by the

FEDERAL FIELD COMMITTEE
FOR DEVELOPMENT PLANNING IN ALASKA

From all authoritative sources

50
0
50 MILES
MANZOF MTS
GE
Sheenjek River
Porcupine River
CANYON VILLAGE
CHALKYITSIK
Black River
YUKON
CIRCLE
CANADA
U.S.A.
Yukon River
MTS
EAGLE

FIGURE III - 52

Today much greater change has come to somewhat reduce Native dependence upon subsistence resources over aboriginal times. In the early 1900's and prior to World War II the trapping of furbearers was a major source of income. The value of furs has sharply declined in recent years so this source of supplementary income is now lost. Also lost is income derived from river boat traffic sources. Today the heads of families generally follow the construction work cycle in Fairbanks, on road jobs or at military installations to secure cash to supplement their families' subsistence harvest--or for that matter, to assist anyone in their village worse off than they.[81]

In 1967 four Kutchin villages of today took the following salmon harvest--representing about 7 percent of the take from the entire Yukon drainage.

Village	No. of Salmon
Stevens Village	3,679
Beaver	4,502
Fort Yukon	9,675
Venetie	2,626
Total	20,482

In another way, available statistics for 1967 offer some glimpse at the subsistence spectrum expressed in pounds of wild food harvested and garden produce grown at Native villages of the region in relation to population.

Five villages with a human population of 215 persons and a canine population of 346 dogs harvested a fish and wildlife subsistence supply, a berry supply and garden produce in the following approximate magnitude which they depended upon for livelihood:[82]

Fish	129,000 lbs.
Big game	62,000 lbs.
Small game and birds	5,000 lbs.
Berries	500 lbs.
Garden produce	3,000 lbs.

To obtain these harvests village populations in all cases range over an average radial distance of 40 to 50 miles from home with greater isolated occurrences for special trips--some trap lines, hunting, etc.

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[81] It is custom with the Kutchin to share for the communal good rather than individual gain.

[82] Bureau of Indian Affairs, Annual Survey of Native Foods, 1967.

TANANA REGION

Ethnic Settlement Patterns

The Tanana and Nabesna Indians originally occupied all of this region--the Tanana River drainage with some Tanana villages on the Yukon River just above and below its confluence with the Tanana River and with a settlement at Minchumina Lake in the upper Kuskokwim River drainage. Both groups were of the Athapascan linguistic group.

The first white contact with the Tanana people was with Russian traders, about 1860, from the lower Yukon followed by Hudson Bay Company employees shortly thereafter. Not until 1885 was there any scientific exploration of the region with the passage down the river by Lieutenant Henry T. Allen, U.S. Army; initial geological and geographical work was done in 1898 by A. H. Brooks. The Nineteenth Centry record on the region is, therefore, very hazy.

"The native population of the Tanana has always been remarkably scarce."[83] Early estimates (Dall) were about 150 families, and Petroff in the 1880 Census "thought they numbered perhaps seven or eight hundred."[84] Whether or not these estimates are reliable is doubtful, however, since the scarlet fever epidemic of 1868 must have taken quite a toll among the Tanana as it did with the Kutchin.

In any event the written record from the 1880's on does not indicate many Native places. (See Figures III - 54 and 55.)

The Tanana people were great traders, and their village of Nuklukayet (present-day Tanana) on the north bank of the Yukon River just below its confluence with the Tanana River was a meeting and trading place of the Tanana, Kutchin and Koyukuk people.

With the advent of the Gold Rush period Tanana Natives gradually left their small places upstream on the Tanana River and inland on its tributaries to participate in the cash/barter economy offered them in supplying food for the thousands of prospectors who entered the region, servicing steamboat wood requirements, and offering furs for that expanding market. This movement made the larger downstream places on the Tanana River and about the Tanana-Yukon confluence grow in size and, subsequently, attract government postal and education services.

Closely related to the Tanana people were the Nabesna of the upper Tanana tributaries and the Nabesna and Chisana River drainages. The Nabesna were divided into four bands: the Nutzotin, Khiltats, Santotin, and Scottie Creek people.

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[83] Ales Hrdlicka, "Anthropological Survey in Alaska," *Alaska Diary 1926-31,* Lancaster, Pennsylvania: Jaques Cattell Press, 1943.

[84] *Ibid.*

FIGURE III - 53

HISTORIC NATIVE PLACES AND CURRENT STATUS
TANANA REGION

NATIVE GROUP	HISTORIC PLACES	EXISTING SETTLEMENT POPULATIONS 25 - 299	300 - 999	1000 +	STATUS UNKNOWN	SEASONAL CAMP SITE	ABANDONED	ANTIQUITY SITE
Tanana	A northern division of the Athapascan linguistic family, formerly erroneously classed among the Kutchin tribes, the area inhabited by them includes the drainage of the lower Tanana River below the Tok River, the region about the confluence of the Tanana and Yukon, and the region along the latter river above the confluence (Osgood, 1936). Their settlements were:							
	Clatchotin, no further information available, on the Tanana River. Location unknown.				X			
	Huntlatin, on the Tanana River, no further information or location available.				X			
	Nuklukayet, a rendezvous for Tanana, Kutchin and Koyukuk tribes, on the north bank of the Yukon just below the mouth of the Tanana. A former Indian trading camp and settlement on the right bank of the Yukon near the junction with the Tanana. This is an old village site in existence prior to 1869. Var. Nu-cha-la-woy-ya ("between the rivers"). Population in 1880 - 27; population in 1890 - 120. Part of present day Tanana.	X						
	Nukluktana, on the Tanana River just below Tutlut (Tuklat or Kantishna) River.					X		
	Tatsa, on the Yukon River. No further information available.				X			
	Tolwatin, on Tanana River. No further information available.				X			
	Tozikakat, north bank of the Yukon at the mouth of Tozi River. Former Indian village reported by Petroff in 1880 Census. Now a region of several fish camps.					X		
	Tutlut, at the junction of the Kantishna and Tanana Rivers, Minto Flats. Var. Tooclok. Reported by Petroff in 1880 and by Schwatka in 1885.						X	
	Weare, at the mouth of the Tanana River, Tanana/Nuklukayet area, 1/2 mile below Tanana trading post of North American Trading & Transportation Company. Indians of Tanana and Kutchin about this junction. Part of present-day Tanana.		X					
	Tortella, near mouth of the Nenana River, probably at or near present village of Nenana. Former Tanana Indian village reported in 1902.	X						
	Minto, on east bank of the Tanana, 44 miles west of Fairbanks. Name reported in 1909.	X						
	Tolovana, on right bank of the Tanana River, near mouth of Tolovana River. (Var. Hootana). Name reported in 1903.					X		
	Baker's, small settlement on right bank of the Tanana River, at the mouth of Baker Creek associated with Baker telegraph station.					X		
	Cos Jacket (var. Coshaget, Cosna), on the left bank of the Tanana at the mouth of Cosna River. Reported as Tanana village 1899 by Lt. Herron. "Cosna" telegraph station near here 1903.					X		
	Mansfield Village, south of Lake Mansfield, six miles northwest of Tanacross. Cited by Hrdlicka as a better known village of the Tanana. Other authority lacking.					X		

NATIVE GROUP	HISTORIC P
	The Tana scarce; 700 or 8 400, Dal largest Toclat R
Nabesna	Belongin inhabite Chisana River, the Tok butaries the Ladu itude 61 They may
	Nutzotin;
	Nandell Tage r tion
	Tetlin Tetlin 1885.
	Khiltats;
	Nabesn River, enced
	Santotin;
	Chisan River, made w in 191 north-
	People of camps alo

aGeneral area of present-

Sources: Giddings, J. L

Hodge, Freder
Office, 19

Hrdlicka, Ales

Orth, Donald J
Printing O

Oswalt, Wende

Spencer, Rober
Bulletin 1

Swanton, John
United Sta

Compilation by

NATIVE GROUP	HISTORIC PLACES	EXISTING SETTLEMENT POPULATIONS			STATUS UNKNOWN	SEASONAL CAMP SITE	ABANDONED	ANTIQUITY SITE
		25 - 299	300 - 999	1000 +				
	The Tanana Native population appears to have always been scarce; Petroff in 1880 thought the total number to be 700 or 800, Brooks in 1898 thought there to be less than 400, Dall thought about 150. Brooks in 1898 reported the largest villages were at the mouth of the Cantwell and Toclat Rivers.							
Nabesna	Belonging to the Athapascan linguistic family, these people inhabited the entire drainage area of the Nabesna and Chisana Rivers, including the tributaries of the Tanana River, which they form at their confluence, as far down as the Tok River; the upper White River, including its tributaries the Beaver and the Snag, and the headwaters of the Ladue, together an area roughly enclosed between latitude 61°31' and 63°30'N, and longitude 141°30' and 143°30'W. They may be broken down into four major bands:							
	Nutzotin; their villages were:							
	Mandell, on Tetlin River near Tetlin Lake. Former village reported to have population of 86 in 1885. Location unknown.						X	
	Tetling (or Tetlin), on Tetlin River, 4.5 miles east of Tetlin Lake and 20 miles southeast of Tok. Reported in 1885.	X						
	Khiltats; their village was:							
	Nabesna Village[a] (or Khitats) on the west bank of Nabesna River, six miles southwest of Northway Junction. Referenced by Hodge in 1907; referenced by USGS in 1945.	less						
	Santotin; their village was:							
	Chisana, on east bank of Cross Creek near the Chisana River, 30 miles southeast of Nabesna. White contact made with these people in 1885; settlement established in 1913. This first settlement is about seven miles north-northwest of the present-day Chisana.							
	People of Scottie Creek - Apparently a Nomadic band with camps along the border into Canada.							

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[a] General area of present-day Northway, Northway Indian Village, and Charlieskin Village.

Sources: Giddings, J. Louis. *Ancient Man of The Arctic*. New York: Alfred A. Knopf, 1967.

Hodge, Frederick Webb (ed.). Part I and Part II: *Handbook of American Indians North of Mexico*. Washington: Government Printing Office, 1907.

Hrdlicka, Ales. "Anthropological Survey in Alaska." *Alaska Diary 1926-1931*. Lancaster, Pennsylvania: Jaques Cattell Press, 1943.

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Spencer, Robert F. *The North Alaskan Eskimo: A Study in Ecology and Society*. Smithsonian Institution, Bureau of American Ethnology, Bulletin 171. Washington: United States Government Printing Office, 1959.

Swanton, John R. *The Indian Tribes of North America*. Smithsonian Institution, Bureau of American Ethnology, Bulletin 145. Washington: United States Government Printing Office, 1953.

Compilation by David M. Hickok, Federal Field Committee for Development Planning in Alaska.

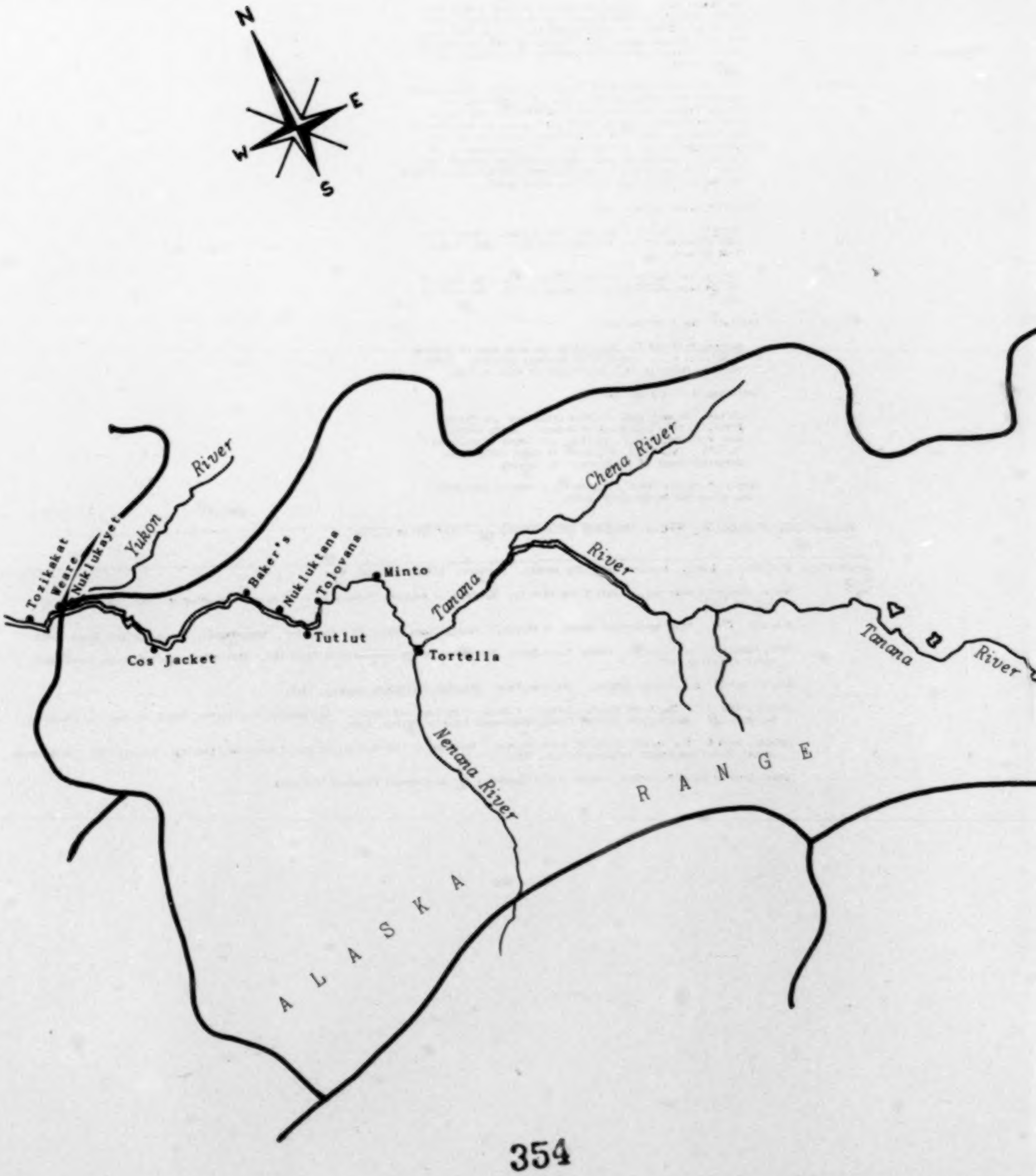
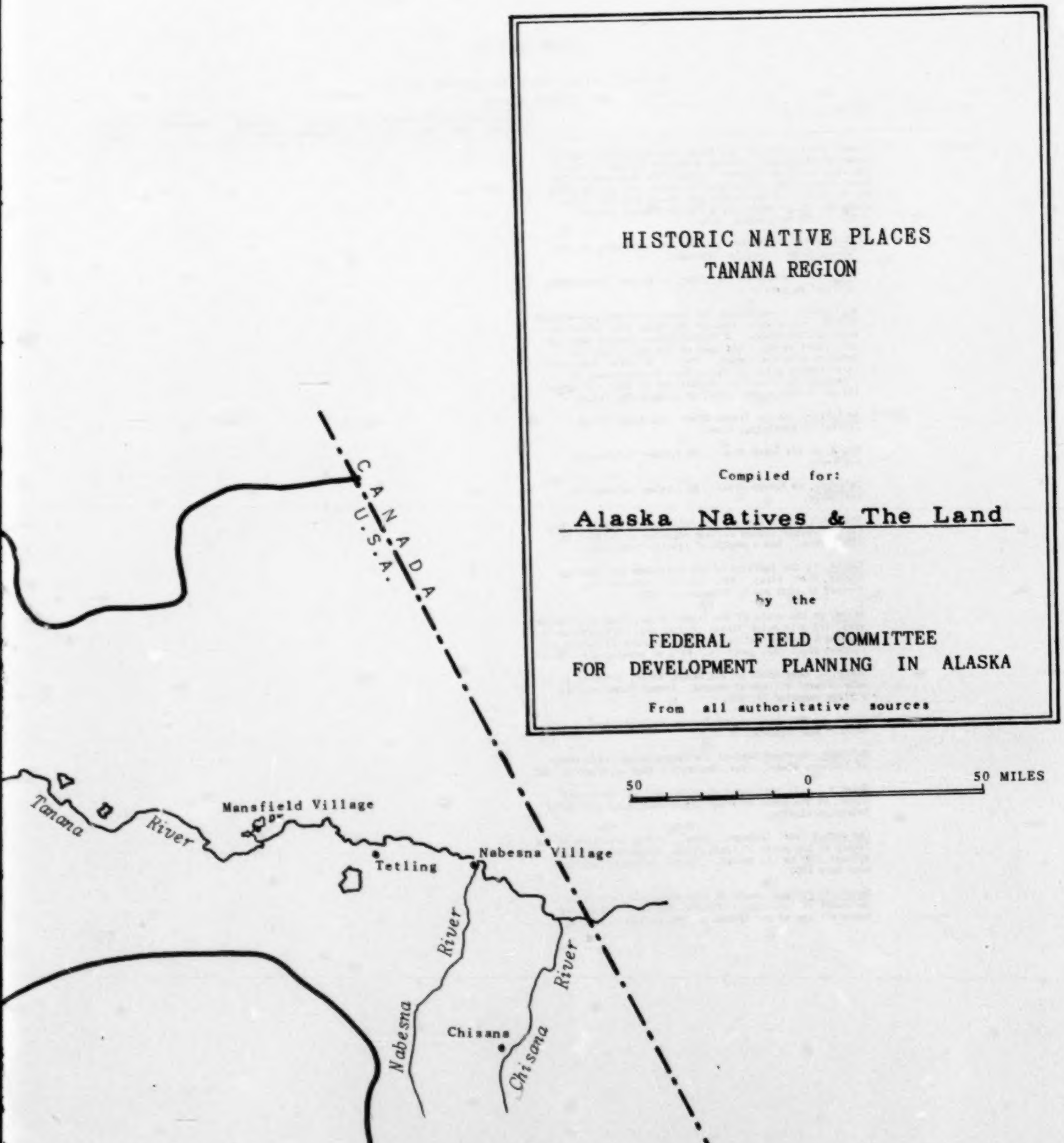

N
E
W
S
Yukon River
Tozikakat
Weare
Nuklukayet
Baker's
Nukluktana
Tolovana
Minto
Cos Jacket
Tutlut
Tortella
Tanana River
Chena River
Nenana River
Tanana River
ALASKA RANGE

FIGURE III - 54



HISTORIC NATIVE PLACES
TANANA REGION

Compiled for:

Alaska Natives & The Land

by the

FEDERAL FIELD COMMITTEE
FOR DEVELOPMENT PLANNING IN ALASKA

From all authoritative sources

CANADA
U.S.A.
50
0
50 MILES
Tanana
River
Mansfield Village
Tetling
Nabesna Village
Nabesna
River
Chisana
River
Chisana

FIGURE III - 54

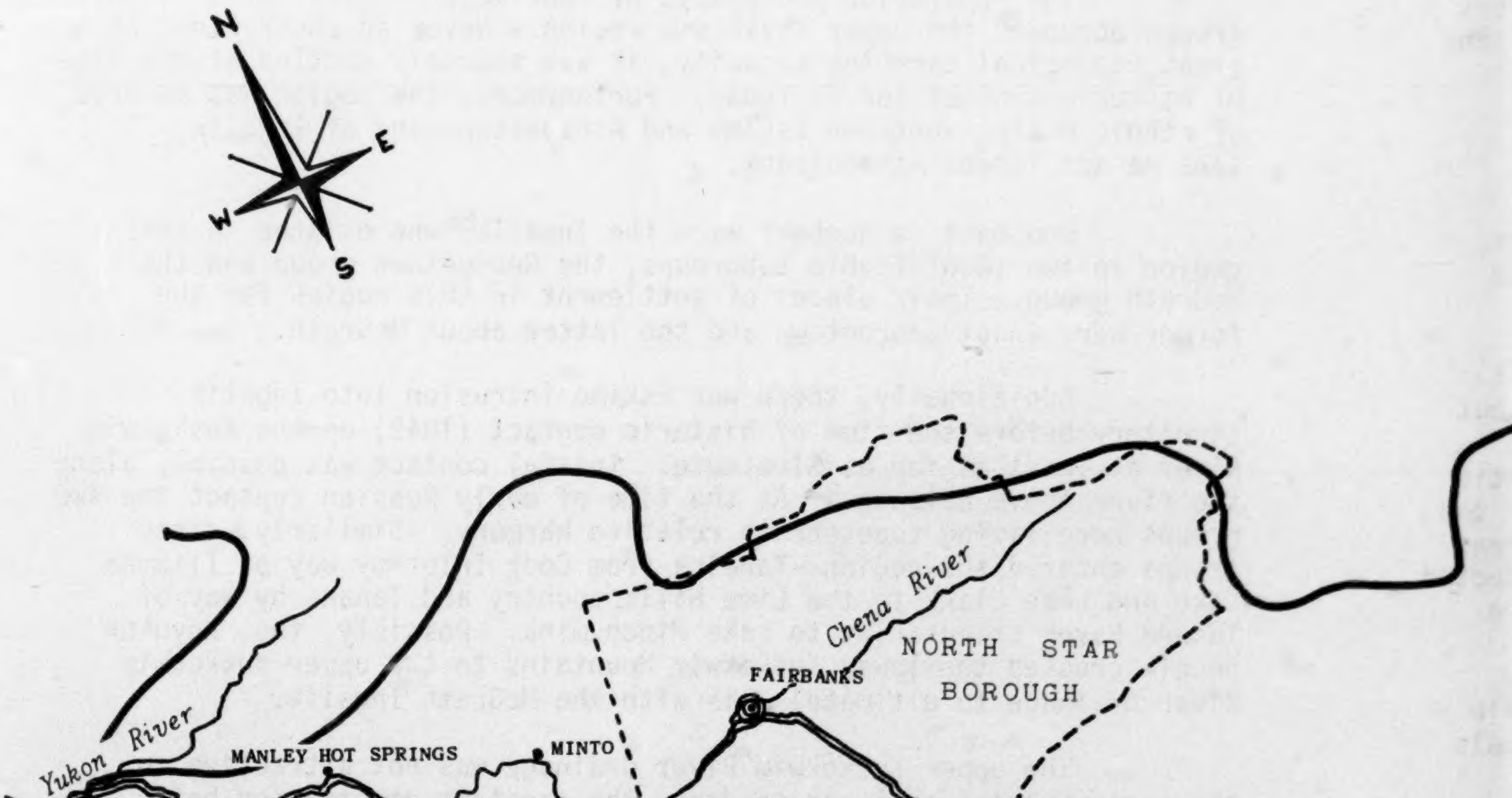
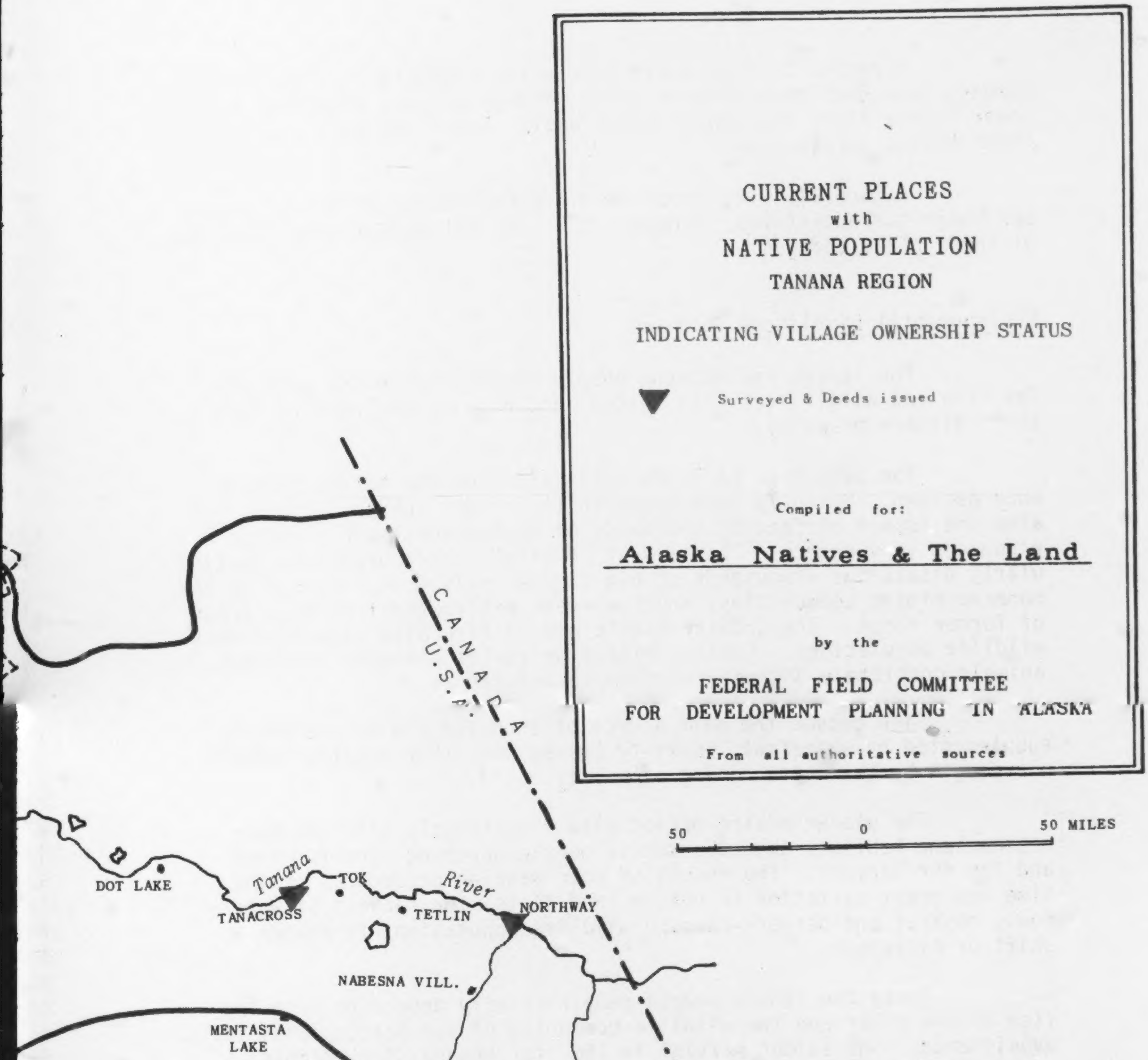

N
E
W
S
Yukon River
Tanana River
Chena River
MANLEY HOT SPRINGS
MINTO
NENANA
FAIRBANKS
NORTH STAR BOROUGH
DOT LAKE
TANA
HEALY
Nenana River
CANTWELL
MENTA
LAK
ALASKA RANGE

FIGURE III - 55



CURRENT PLACES
with
NATIVE POPULATION
TANANA REGION

INDICATING VILLAGE OWNERSHIP STATUS

▼ Surveyed & Deeds issued

Compiled for:

Alaska Natives & The Land

by the

FEDERAL FIELD COMMITTEE
FOR DEVELOPMENT PLANNING IN ALASKA

From all authoritative sources

CANADA
U.S.A.
50
0
50 MILES
DOT LAKE
Tanana
River
TOK
TANACROSS
TETLIN
NORTHWAY
NABESNA VILL.
MENTASTA LAKE

FIGURE III - 55

A people of very small population historically, their numbers have been more reduced today through outward migration to lower Tanana River and Copper River basin places and mixing with those Native populations.

Figure III - 53 cites the historic record of Native places and their current status. Figures III - 54 and 55 show the locations of these place changes.

Environmental Livelihood Patterns

The Tanana and Nabesna people lived in riverine habitats. The fish and wildlife of this bottom land-aquatic environment were their dietary mainstay.

The Gold Rush period greatly affected the Native subsistence pattern. Not only were there shifts in Native populations, but also the impact of feeding thousands of prospectors made wildlife resources very scarce. The harvest of wildlife resources was particularly disastrous--thousands of big game animals were required by the booming mining communities, and they were extirpated from many areas of former range. The indiscriminate use of fire also greatly affected wildlife populations. Caribou migration routes changed, and these animals completely disappeared from former ranges.

Fish became the main source of food for the Native people supplemented by waterfowl, muskrat, beaver and other aquatic mammals not sought by the white mining community.

The placer mining period also disastrously affected many bottom land habitats that the Native people depended upon for food and for fur harvest. The result of gold washing procedures of the time was great siltation in bottom land flats--the habitat of waterfowl, muskrat and beaver--causing wildlife populations to either shift or disappear.

Today the Tanana people remain chiefly dependent upon the fish of the river and the wildlife community of the bottom lands for subsistence. The salmon harvest in 1967 for Nenana, for example, was 3,769 fish.[85] In this cycle of food quest their pattern is similar to that shown in Figure III - 49 for the Koyukuk River towns of Huslia and Allakaket, although their proximity to the Fairbanks cash labor market provides a situation of less dependency upon natural biotic resources than that of Natives in more isolated regions of the Yukon River drainage.

---

[85] Alaska Department of Fish and Game, Division of Commercial Fisheries, Salmon Subsistence Fishery Survey, 1967.

UPPER KUSKOKWIM REGION

Ethnic Settlement Patterns

The population and places of four major Alaska Native ethnic groups occupied the Upper Kuskokwim region. Never an environment of great biological carrying capacity, it was sparsely settled at the time of historic contact and is today. Furthermore, the region was an area of ethnic mixing--between Eskimo and Athapascan--and of Ingalik, Tanaina and Tanana Athapascans.

Dominant in numbers were the Ingalik[86] who existed in this region in two identifiable subgroups, the Georgetown group and the McGrath group. Their places of settlement in this region for the former were about Georgetown and the latter about McGrath.

Additionally, there was Eskimo intrusion into Ingalik territory before the time of historic contact (1842) up the Kuskokwim River at least as far as Sleetmute. Initial contact was possibly along the river above Kalskag.[87] At the time of early Russian contact the two groups were living together in relative harmony. Similarly, other groups entered the region--Tanaina from Cook Inlet by way of Iliamna Lake and Lake Clark to the Lime Hills country and Tanana by way of Tanana River tributaries to Lake Minchumina. Possibly, too, Koyukuk people crossed the lower Kuskokwim Mountains to the upper Kuskokwim River drainage to ultimately mix with the McGrath Ingalik.

The upper Kuskokwim River drainage was not attractive to the early Russian explorer-traders, the greatest penetration being made by Zagoskin to Vinasale and the mouth of the Takotna River in 1844. In 1830 their initial ascendency up the upper Kuskokwim River was met by hostility, but some friendships were made--enough to permit the establishment of a trading post in 1832 on the west side of the Holitna River at its junction with the Kuskokwim River. It was soon abandoned due to its inaccessibility to central river people, and a successor post was built in 1833 at the small Eskimo-Ingalik village of Kwigiumpainukamiut at the junction of the Kwik and Kuskokwim Rivers. It, too, was succeeded by a third and last Russian post built in 1841 diagonally across the Kuskokwim from the Kwigiumpainukamiut village. In honor of Alexander Kolmakov this settlement, blockhouse and barracks of Russian administration was named Kolmakov's Redoubt.

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[86] Ingalik is an Eskimo term for Indian meaning "having louse's eggs."

[87] Wendell H. Oswalt, *Mission of Change in Alaska*, San Marino, California: The Huntington Library, 1963.

FIGURE III - 56

HISTORIC NATIVE PLACES AND CURRENT STATUS

UPPER KUSKOKWIM REGION

NATIVE GROUP	HISTORIC PLACES	EXISTING SETTLEMENT POPULATIONS 25 - 299	300 - 999	1000 +	STATUS UNKNOWN	SEASONAL CAMP SITE	ABANDONED	ANTIQUITY SITE
Ingalik	One of the westernmost divisions of the Athapascan linguistic stock, located between Anvik and Holy Cross on the lower Yukon River including the drainage of the Anvik River and the region southeast to the Kuskokwim River including its drainage above Georgetown. Subdivisions: Osgood (1934) makes the following: (1) Anvik-Shageluk group, centering around the villages bearing these names. (2) Bonasila group, centering around the village of the same name. (3) Holy Cross-Georgetown group, centering around the villages bearing those names. (4) McGrath group, the people of the drainage of the upper Kuskokwim River; this group somewhat arbitrarily constructed. Their settlements in this region were:							
	Holy Cross-Georgetown group							
	Akmiut, on the left bank of the Kuskokwim River near mouth of Holokuk River (61°31'N, 158°35'W). Reported in 1898.				X			
	Napai, on the north bank of Kuskokwim River. Present-day Napaimiut, an existing place with a population of 10 on the right bank of the Kuskokwim, 28 miles east of Aniak-Eskimo-Indian village. Population of 60 in 1880.	less						
	Kwigiumpainukamiut, Eskimo-Ingalik village the site of 1833 Russian trading settlement. Kolmakov's Redoubt built in 1841 across the Kuskokwim River from this site.						X	
	Georgetown, on right bank of Kuskokwim River, 16 miles northwest of village of Red Devil and 22 miles northwest of Sleetmute. Trading post reported here in 1910. Present place.	X			X			
	Crooked Creek, on north bank of Kuskokwim River just east of junction with Crooked Creek. Var. Parents. Village and trading post established at site of small, old Indian village.	X						
	Red Devil, on left bank of Kuskokwim six miles northwest of Sleetmute. Present place.	X						
	Sleetmute, on east bank of the Kuskokwim River, approximately 1.5 miles north of its junction with the Holitna River. Reported as an Eskimo village in 1907, however, Hosley reports that the Ingalik did move as far south as Sleetmute also.	X						
	Stoney River, on north bank of the Kuskokwim, north of its junction with Stoney River. Originally called Moose Village, also site of trading post and riverboat landing. First located 1.5 miles upstream from present location.	X						
	Canoe Village, on the west bank of the Kuskokwim, 5.5 miles south of Crooked Creek.				X			
	Oskawalik, on right bank of the Kuskokwim opposite the mouth of the Oskawalik River, 8 miles southwest of Crooked Creek. This Indian camp was reported in 1913.				X			
	Itulilik, on east bank of the Holitna River, 22 miles south of Sleetmute. This camp or settlement is reportedly now abandoned. Cited in 1902 manuscript.						X	
	McGrath group							
	A northern Athapascan group situated on the upper Kuskokwim River in central Alaska. There is evidence which indicates the present group is an amalgamation of at least two earlier societies, and they show strongest connections with the Intalik of the Lower Yukon River. Their settlements in this region were:							
	Nikolai, at junction of South Fork Kuskokwim and Little Tonzona Rivers, 46 miles east of McGrath. Moved to this location in 1925 from "Old Nikolai."	X						
	Old Nikolai, twenty-five miles up the South Fork from present-day Nikolai. The people moved from here in 1925.						X	
	Medfra, on the right bank of the Kuskokwim. Var. Berrys Landing. A trading post for many years, in early times it may have been an Indian camp.	X						

NATIVE GROUP

Tanana

Tanaina

Eskimo

Sources:

NATIVE GROUP	HISTORIC PLACES	EXISTING SETTLEMENT POPULATIONS			STATUS UNKNOWN	SEASONAL CAMP SITE	ABANDONED	ANTIQUITY SITE
		25 - 299	300 - 999	1000 +				
	Big River, at the mouth of Big River at its junction with Middle Fork Kuskokwim. Abandoned within the last 40 or 50 years and people probably moved to Nikolai.						X	
	Slow Fork, on Slow Fork Kuskokwim River; location unknown but may be at ruins where Slow Fork junctions with East Fork. Abandoned within the last 40 or 50 years and people moved to Nikolai.						X	
	Tonzona, on the Tonzona River near Slow Fork area. Abandoned within the last 40 or 50 years and people moved to Nikolai or Telida.						X	
	Takotna, on the Takotna River just above McGrath. Abandoned within the last 40 or 50 years and people moved.						X	
	Salmon River village, on the Salmon River east of Big River. Abandoned within the last 40 or 50 years and people probably moved to Nikolai.						X	
	Nixon Fork of the Takotna. Location unknown. Abandoned within the last 40 or 50 years.						X	
	Vinasale, on left bank of the Kuskokwim River, 20 miles south of McGrath. Indian village and later a trading post. Reported by Zagoskin in 1842-44. Reportedly abandoned about 1935. The population in 1890 was 140.				X			
	McGrath, on left bank of the Kuskokwim opposite junction of Takotna River. Present place.	X						
	Old McGrath, on the right bank of the Kuskokwim opposite the present-day McGrath.						X	
	Telida, presently located on the left bank of Swift Fork Kuskokwim River, 50 miles northeast of Medfra. First reported in 1899; however, established at its present location since 1916.	less						
	Old Telida, located more towards Lake Minchumina than present-day Telida and first reported in 1899 with a population of 17.				X			
Tanana	A division of the Athapascan and inhabiting primarily the Tanana Region; however, some did come into this region and settle at Minchumina Lake. Their settlement was:							
	Minchumina Lake, on the northwest shore of Minchumina Lake. First reported in 1844. It is a present place.	less						
Tanaina	These people are also referred to as the "Lime Hills" people and are a division of the Athapascan. Their village in this region is:							
	Lime Hills, left bank of Stoney River, near junction of Hungry Creek. Var. Hungry Village.	X						
Eskimo	There are two Eskimo villages, both apparently abandoned, at the southernmost end of this region and are probably isolated places of the Kuskwogmiut. They are:							
	Nogamut, on east bank of Holitna River, 50 miles southwest of Sleetmute. This Eskimo settlement or camp was cited in 1902 manuscript of a local prospector.				X			
	Kashegelok, on right bank of the Holitna River, opposite mouth of Chukowan River, 64 miles southwest of Sleetmute. This Eskimo village was reported by a prospector who wintered here in 1902-03.				X			

Sources: Giddings, J. Louis. *Ancient Men of The Arctic*. New York: Alfred A. Knopf, 1967.

Hodge, Frederick Webb (ed.). Part I and Part II: *Handbook of American Indians North of Mexico*. Washington: Government Printing Office, 1907.

Hosley, Edward H. *The McGrath Ingalik*, Anthropological Papers of the University of Alaska, Volume 9, Number 2. College, Alaska: University of Alaska, 1961.

Orth, Donald J. *Dictionary of Alaska Place Names*, Geological Survey Professional Paper 567. Washington: United States Government Printing Office, 1967.

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Swanton, John R. *The Indian Tribes of North America*. Smithsonian Institution, Bureau of American Ethnology, Bulletin 145. Washington: United States Government Printing Office, 1953.

Compilation by David M. Hickok, Federal Field Committee for Development Planning in Alaska.

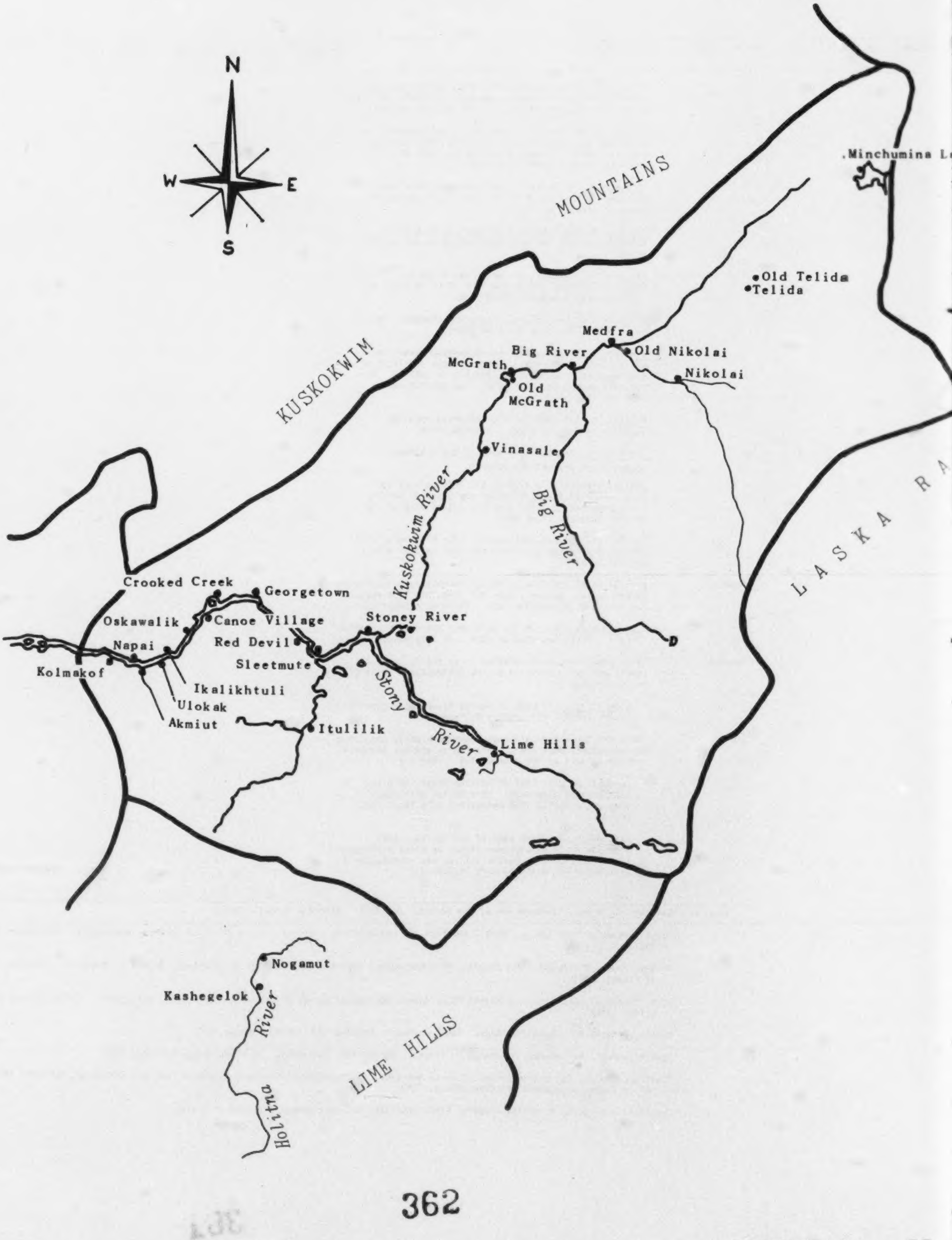
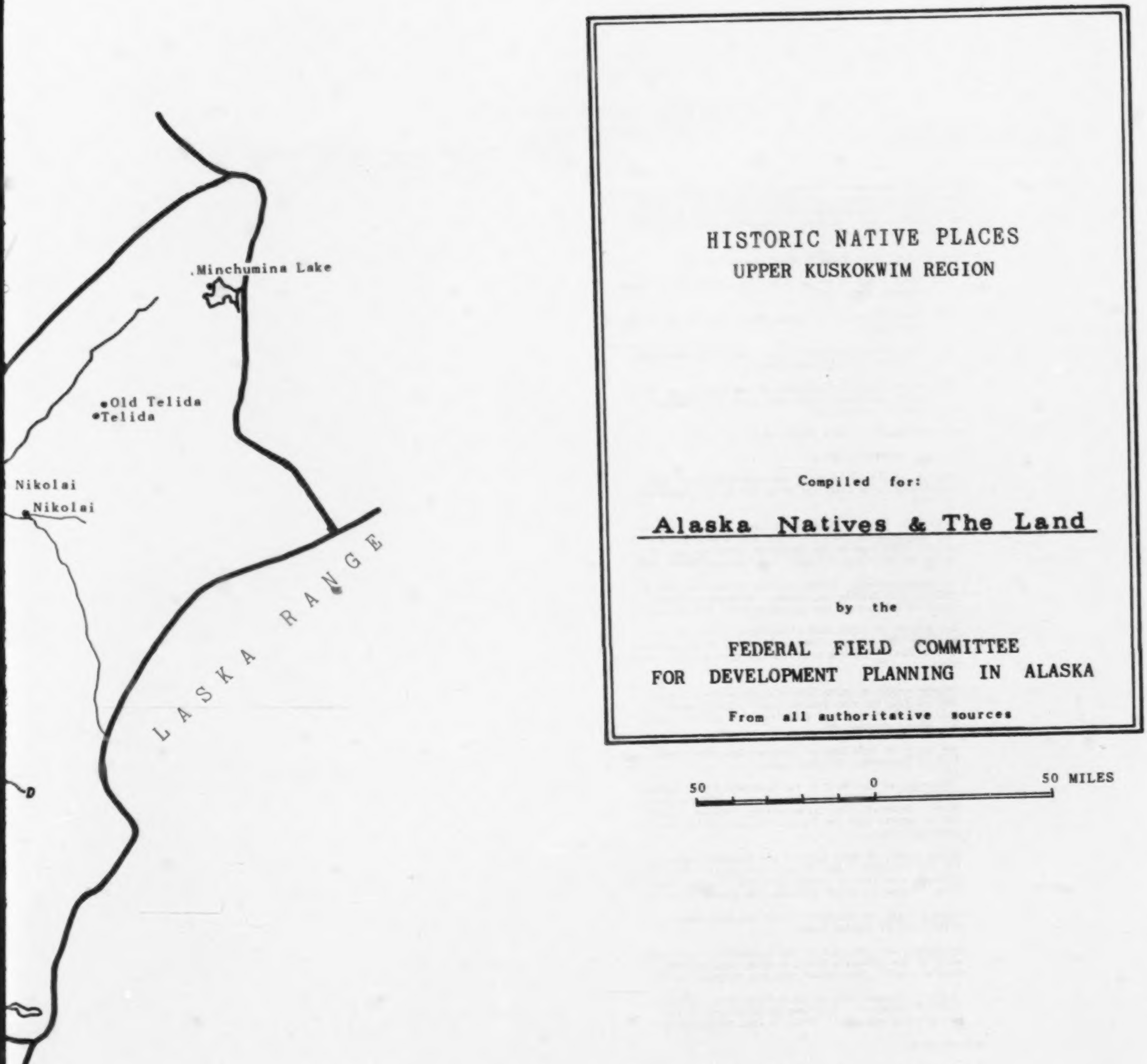

N
W
E
S
MOUNTAINS
KUSKOKWIM
.Minchumina L
•Old Telida
•Telida
Medfra
Big River
Old Nikolai
Nikolai
McGrath
Old McGrath
Vinasale
Kuskokwim River
Big River
LASKA RA
Crooked Creek
Georgetown
Oskawalik
Canoe Village
Stoney River
Napai
Red Devil
Sleetmute
Kolmakof
Ikalikhtuli
Ulokak
Akmiut
Itulilik
Stony River
Lime Hills
Nogamut
Kashegelok
River
Holitna
LIME HILLS

FIGURE III - 57



HISTORIC NATIVE PLACES
UPPER KUSKOKWIM REGION

Compiled for:

Alaska Natives & The Land

by the

FEDERAL FIELD COMMITTEE
FOR DEVELOPMENT PLANNING IN ALASKA

From all authoritative sources

Minchumina Lake
Old Telida
Telida
Nikolai
Nikolai
LASKA RANGE
D
50
0
50 MILES

FIGURE III - 57

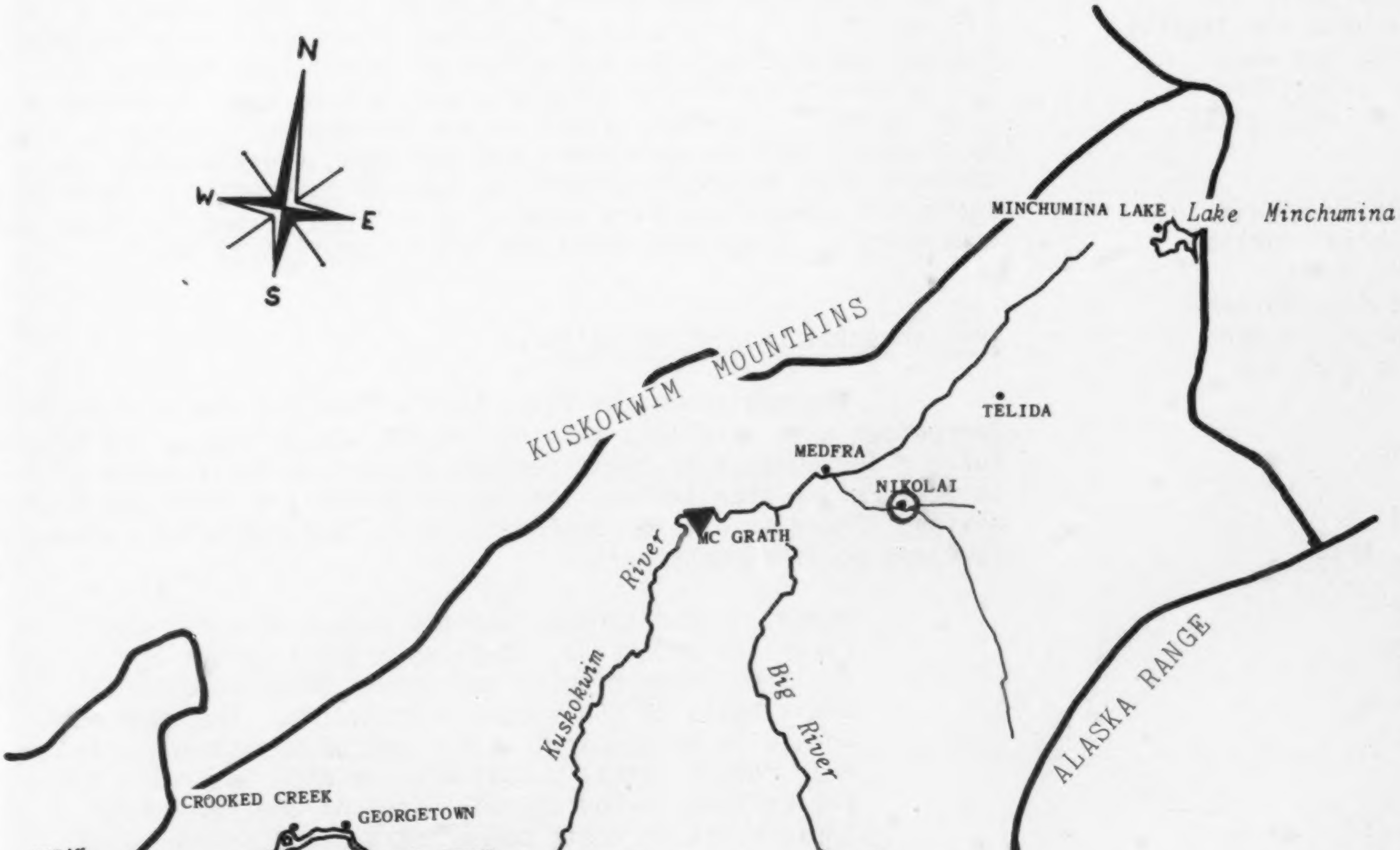

N
W
E
S
KUSKOKWIM MOUNTAINS
MINCHUMINA LAKE
Lake Minchumina
TELIDA
MEDFRA
NIKOLAI
MC GRATH
Kuskokwim River
Big River
ALASKA RANGE
CROOKED CREEK
GEORGETOWN
ANIAK
RUSSIAN MISSION
NAPAIMUTE
RED DEVIL
STONY RIVER
SLEETMUTE
Stony River
LIME VILLAGE

FIGURE III - 58

Lake Minchumina
RANGE

CURRENT PLACES
with
NATIVE POPULATION
UPPER KUSKOKWIM REGION

INDICATING VILLAGE OWNERSHIP STATUS

▼ Surveyed & Deeds issued
○ Survey proposed

Compiled for:

Alaska Natives & The Land

by the

FEDERAL FIELD COMMITTEE
FOR DEVELOPMENT PLANNING IN ALASKA

From all authoritative sources

50 0 50 MILES

This Russian period of influence on settlement patterns along the Kuskokwim was only transitory and generally of the character discussed earlier with regard to the Yukon River and affect upon the Ingalik and Koyukuk of that region. The upper Kuskokwim River reaches were virtually unknown and certainly little understood in any scientific sense until the 1890's and the advent of the Gold Rush and geological exploration.[88]

The McGrath Ingalik on the upper reaches of the Kuskokwim were not studied by an ethnographer *until 1960*, despite brief mention by early explorers. In the summer of that year Edward H. Hosley attempted to piece together from the historic record and from informants some record of these people. His work must, of course, be considered in fairly recent context and acknowledgment made that the past history of these people is very hazy.

The following comment is from Hosley's paper.[89]

> It is apparent, from ethnographic evidence and linguistic affiliations related by informants, that at one time, there were two distinct groups of Indians in the upper Kuskokwim region. One of these, in an area extending from the South Fork of the Kuskokwim River, south to the region of Stony River and Sleetmute on the lower Kuskokwim, was most closely affiliated with the Ingalik of the lower Yukon River regions of Holy Cross, Anvik and Shageluk. The second group, from about the Tonzona River north to Lake Minchumina and the upper Kantishna River, although linguistically close to the Ingalik, was seemingly more nearly related to Indians of the Tanana region and the middle Yukon River. In addition, there is evidence that a small group of Koyukon Indians from the Yukon River settled near Lake Minchumina about the middle of the last century.

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[88] In 1889 Densmore, with a party of prospectors, passed from the Tanana to the Kuskokwim descending to the Yukon Portage; in 1898 the geologist Spurr crossed the Alaska Range from the east and traveled down the South Fork to the main stem of the Kuskokwim River which he descended; in 1899 Lieutenant Herron crossed the Alaska Range near Rainy Pass and descended the South Fork of the Kuskokwim to Nikolai Village, then visited Indian villages at Telida and Minchumina Lake.

[89] Edward H. Hosley, *The McGrath Ingalik,* Anthropological Papers of the University of Alaska, Volume 9, Number 2, College, Alaska: University of Alaska, 1961.

In the last 40 to 50 years most of the habitation places of the Upper Kuskokwim Native population have been abandoned (see Figure III - 56); the causes have been threefold: river channel changes and erosion, the attraction of present-day McGrath and Medfra with their better services, and perhaps most important in this region "...the end result of the decimation in numbers, caused by diseases such as diphtheria and smallpox, shortly after the first contacts with Americans around the turn of the century. Most of the abandoned communities were reduced to but one or two families, who continued to live there until the older people died."[90]

Environmental Livelihood Patterns

The environmental livelihood pattern of the Natives in the Georgetown area parallels that of the Holy Cross people and middle Yukon. The culture of these people, as well as their modes of living, is more Eskimo than Indian, the former dominating after years of intermixing. There is a major dependency upon fish resources, moose, waterfowl and aquatic furbearers.

> Today, in the spring, shortly before or after the river ice breaks up, families without school-age children leave Nikolai and travel downstream in their boats to the vicinity of Medfra. The remainder follow in early June, at the end of the school year. Near Medfra, usually scattered at wide intervals for two or three miles on both sides of the river, the Indians set up their summer fish camps in groups of two or three families related through brothers or sisters. Dwellings consist of canvas tents, one to a family, and in addition there is usually a small canvas bath house, an open smoke house with a canvas or metal roof, and sometimes a small cache. The dog teams, usually five or six dogs per family, are staked out at intervals about the camp, and skiffs with outboard motors are usually moored a few yards from the tents. The tents, as with the cabins at Nikolai Village, invariably face the river. The groups customarily remain sedentary until early September.
>
> The Indian families usually return to the same fish camp site for several summers, and the location is considered to be the property of the families occupying it. Changes of location, however, occasionally are made in mid-summer because of a relocation of fish wheels, or due to minor strife between neighbors.

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[90] *Ibid.*

Upon reoccupation of a site in the spring, the men return the fish wheels to the river. These are drawn up on the banks during the winter, to prevent damage from the ice jams. Each family has at least one fish wheel, and usually more than one. Until the salmon run in the early fall, however, these collect only a dozen or so fish a day, mostly whitefish. Fish wheels were introduced into the Kuskokwim River region about 1910-1920, by Americans. They are large paddle-wheel affairs, constructed of peeled saplings, scrap lumber, and chicken wire. They are turned by action of the current, and dip fish swimming upstream into baskets.

Fish wheels are most often placed on the outside of a curve in the river, where the water is usually deepest and swiftest, and are generally located within walking distance of the fish camp.

In former times, weirs in conjunction with fish traps were employed, and stationary gill-nets are still used by some, although the latter are no longer made by the Indians themselves.

Despite the fact that the river near Nikolai is narrower than at Medfra, and thereby a better location for fishing, the people travel downstream to Medfra. In part, this is in order to be close to the store and post office located there. More important, however, is the fact that once the fish camps have been set up, and fish wheels repaired and placed in the river, the men have little to do until early August, when the salmon run begins. They therefore are free to take summer jobs in McGrath and elsewhere, particularly with the Forest Service [actually Bureau of Land Management] fire crews. The presence of a radio-telephone and an airfield at Medfra facilitates their apprisal of, and transportation to, areas where work is available.

In early August, the men of Nikolai who have been working, return to their fish camps and prepare for the salmon run. At this time, they may cut winter wood for the few whites in the area, and for shipment by barge to McGrath. In addition, they may build new fish wheels, tend a few small garden plots, and hunt. Berries ripen at this time, and the women and children usually spend several days gathering them.

During the salmon run, the fish are cleaned and split, and then either dried in the smoke houses, or salted in barrels for winter use. Fish are now used primarily for winter dog feed, the people subsisting largely on purchased staples.

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in September, with the onset of cold weather, the McGrath Ingalik return to Nikolai village, and the children return to the school there which has been in operation for five or six years. At this time also, they harvest their small garden plots at Nikolai, which they have tended from time to time during the summer. The crops grown are primarily potatoes, with some rhubarb, lettuce, carrots, onions, and turnips. The amount of land cultivated, however, is generally small, and the average plot for a family is only about 20 feet square.

In preparation for the winter season, dog harness is mended, dog sleds and snowshoes constructed or repaired, and prior to the river's freezing, boats are removed from the water, painted and repaired. Some wood for winter fuel may be cut, but this is customarily obtained only as needed, since anyone with a large supply of wood soon loses it to his neighbors and relatives.

In the fall, some hunting is done, mainly for moose and ducks in season, and preparations are made for fur trapping. The furs thus obtained are primarily beaver, although numbers of other skins are also obtained. With a full limit of 20 beaver skins, a family can expect to add several hundred dollars to their income. Although the prices for fur fluctuate, large prime beaver pelts bring as much as twenty dollars in McGrath or Medfra. The men follow set trap lines, usually the same one every winter. The region is, however, beginning to be trapped out, and the Indians are finding it necessary to go far afield to obtain results. The trap lines are run by dog team, although there has been a tendency for the more affluent men to have their supplies flown out to the trap line. Most families have at least one dog sled, to which the teams are hitched in tandem.

During the early spring, little is done at Nikolai aside from some occasional hunting and trapping, and periodic trips by dog team to Medfra for mail and supplies. The people are usually impatient for warmer weather, and at the first sign of thaw or spring breakup, several families will immediately prepare to leave for their summer fish camps, although it may be several weeks before the snow leaves the ground.

The above seasonal round is quite different from that which was observed in earlier times. Up until some 40 or 50 years ago, it was the practice of the Nikolai group to travel in the early spring from their village, then located several miles further upstream, to the mouth of Big River to the south. There, they would be joined by relatives from Vinasale, and the people would then travel by dog team southeastward toward the Alaska Range, reaching the foothills prior to the spring breakup of the river ice. This group would then spend the summer in the foothills, traveling northeastward across the upper reaches of the Middle Fork of the Kuskokwim River, Windy Fork, and Sheep Creek.

During this time, the Indians would hunt and fish, drying the meat for winter use. By fall, prior to the onset of freezing weather, the group would have reached the headwaters of the South Fork of the Kuskokwim. Here, they would build bull boats of caribou hides stretched over a sapling framework, load their summer's catch, and return downstream to their villages.

That this was a general aboriginal practice for the region is indicated by the statements of Mr. Bob Stone, a white resident of the area for some 40 years. He stated that in his earlier days, he saw numerous abandoned summer campsites on McKinley and Foraker Creeks in the Kantishna drainage, often with moose blinds still in place on the sand bars.

McGrath Ingalik informants stated that it was also a general practice, in former times, for Eskimos from far down the Kuskokwim River to asend to the Alaska Range to hunt caribou. This was done in the spring by means of the Stony River Drainage. Upon reaching the foothills, these Eskimo would also spend the summer months hunting and drying the meat for winter use. They would move north to the headwaters of Big River, and occasionally as far as the South Fork of the Kuskokwim River. There, in the fall, the Eskimos would construct sewn-skin boats, and descend to the Kuskokwim River and their own villages to the south. Contacts between Eskimos and the McGrath Ingalik were few and peaceful, however, and the Eskimo boats usually drifted past the Ingalik villages without stopping.[91]

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[91] *Ibid.*

The McGrath Ingalik are well integrated into our money economy, and depend upon furs and summer work for the bulk of their income. State aid also plays an important part in their economy, with old age assistance and aid to dependent children amounting to over $1000 a month. The average yearly income of an Indian family at Nikolai is from $1700 to $2000 a year.

The Indians obtain a substantial amount of their subsistence from the environment, including game, fowl, fish, and berries in season, but they purchase the bulk of their food from the store at Medfra. Staples include flour, sugar, canned goods, coffee, tea, butter, eggs, bacon, and powdered milk. Except for some articles of winter wear, all clothing is also purchased either at Medfra or McGrath, and occasionally also through mail-order houses.

As a result of this dependence upon the stores for most of their needs, and the sporadic nature of their income, most things are purchased on credit, and the Indians usually have a standing debt of from $50 to $200. In addition, they rarely buy large quantities of food, preferring to make frequent trips to Medfra, even during the winter months.[92]

BRISTOL BAY REGION

Ethnic Settlement Patterns

The Bristol Bay Region, like the Aleutian, Kodiak, Cook Inlet, Gulf of Alaska and Southeast regions, has been subject to greater forces of change than northern, western and interior Alaska. The patterns of ethnic and Native village changes in the region reflect the effect of these forces:[93]

... from Cook's discovery in 1778;

... through the Russian mission/trading activity between 1818 and 1867;

... through the early part of American administration and trade between 1867 and 1890;

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[92] *Ibid.*

[93] The reader is referred to James W. VanStone, *Eskimos of the Nushagak River*, for one of the few truly comprehensive ethnographic histories available for reference on Alaskan Natives.

... through the period of Russian Orthodox and Moravian church competition during the 1880's and 1890's;

... through the initial period of scientific and economic geological and biological investigation from 1890 to 1935;

... to the modern period of scientific inquiry and development from 1935 to date.

The details of these periods make facinating reading but are too lengthy for our purposes here. It must be enough to merely note these salient influences upon the Native populations.

Many Native population shifts have occurred in this region from the time of earliest record to the present day. Also it appears that population shifts and the mixing of sub-ethnic groups was well underway prior to initial Russian contact.

VanStone summarizes population groupings of the region at the time of contact by emphasizing three points.[94]

> First of all, most of the early sources make a distinction between coastal and inland populations in the area....Secondly, there was a mixed population in the Nushgak River region even at the time of earliest contact, and the duality of the Kiat and Aglegmiut was already in a state of flux before the Russians appeared on the scene. Thirdly, this trend began, in all probability, in the prehistoric period, continued through the nineteenth century, with movements from the Kuskokwim being particularly common, and was accentuated during the early twentieth century by epidemics that further obliterated the aboriginal distinction between coastal and inland peoples. As a result of all these trends, little can be observed of the aboriginal population groupings and these can be only partially reconstructed through the use of the historic source material together with the vague and uncertain information that can be collected from present inhabitants of the area.

The partial reconstruction[95] that has been achieved for this region and which appears most authoritative is as follows:

... *Togiamiut,* living about Togiak Bay and River,

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[94] James W. VanStone, *Eskimos of the Nushagak River,* Seattle: University of Washington Press, 1967.

[95] Hodge and Swanton, *op. cit.*

... *Nushagagmiut*, living along the Igushik, Wood and Nushagak Rivers, in the Tikchik Lake region and along the shores of Nushagak Bay,

... *Kiatagmiut*, inhabiting the Kvichivak River and Lake Iliamna region, and

... *Aglemiut*, occupying the territory from the mouth of the Nushagak River to about Heiden Bay along the north shore of the Alaska Peninsula.

As earlier noted the mixing of ethnic groups in this region probably precedes the period of historic contact,thus the grouping must be considered somewhat arbitrary.

In the historic period we know that this population mixing was affected early by the attraction of Alexandrovski Redoubt. Records from several sources[96] indicate that Eskimos from the Kuskokwim region, the Alaska Peninsula, Aleuts and Tanaina Indians from the Cook Inlet all visited and lived about the redoubt for various periods of time.

Some glimpse of the early settlement patterns and their changes is noted in VanStone, who summarizes some data from historic sources and archeological surveys.

> The Tikchik, Nuyakuk, and Nushagak rivers will be discussed first. Between 1800 and 1860 there were, for certain, only four occupied sites in the area, with the possibility of a fifth. Tikchik was located at the mouth of the river of that name, Agivavik south of the present community of New Stuyahok, and Akulivikchuk and Kokwok, also in the middle river area. The lower river is something of a mystery at this time, but there is a single small site, the name of which is not known, approximately twenty five miles from the mouth of the Wood River. Based on our information from these sites the total population of the region between these dates probably was somewhere between 400 and 500, a figure corresponding roughly to the data obtained by Vasiliev in 1829 (quoted in Zagoskin, 1956, p.301).
>
> Between 1860 and 1900 a number of new settlements came into existence to replace, in degree of importance, earlier ones. However, the basic continuity of upriver and middle river population centers was not greatly altered. Old Koliganek replaced Tikchik as the major upriver settlement; and in the middle river, three new villages appeared; Akokpak, Elilakok, and

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[96] VanStone, *op. cit.*, p. 119.

Tunravik. Probably no more than 100 persons ever occupied these three settlements. In the Kokwok-Akulivikchuk area we can discern a considerable shift in population. Agivavik and Akulivikchuk were abandoned and Kokwok was in a decided decline. Ekwok emerged as the major settlement for this section of the middle river and it has maintained this position down to the present time. The lower river still remained something of an enigma and although several small settlements were occupied, there were probably not, during this period, more than 75 people living between Ekwok and the mouth of the river. A conservative population estimate between 1860 and 1890 for the entire region would be approximately 400 people. This figure corresponds closely to the previously cited population statistics based on Orthodox church sources at the close of the century.

Turning to Nushagak Bay, we have noted that at the time of earliest contact there were four large and important settlements in the area, three on the east side and one on the west side of the bay. Ekuk, Kanakanak, Nushagak, and Kanulik, together with Igushik at the mouth of the Snake River must have contained all or most of the population of the bay when the Russians first appeared and for some time thereafter. It is probable that all five settlements began to grow after Alexandrovski Redoubt was established and Nushagak undoubtedly attracted the greatest number of new inhabitants. These people came from the interior area of the Nushagak River region, from the Kuskokwim River and other coastal and interior points in between, and from the Alaska Peninsula. By 1860 Tikhmenev's previously cited estimate of a population of 1,260 Eskimos in the bay area may not have been excessive, allowing for the probable inclusion of seasonal migrants.

The establishment of the salmon canning industry in Nushagak Bay in 1884, of course, had a profound effect upon the population and settlement pattern, an effect, at least as far as population was concerned, that was undoubtedly counterbalanced by periodic epidemics that swept the area. Just prior to 1884, on the basis of statistics in Petroff (1884), we can estimate the permanent population of the bay area at approximately 600 to 700 persons or perhaps slightly more. Kanulik, of course, was strongly affected by the establishment of a cannery in its vicinity in 1884 and the Moravian church two years later. Nushagak, Ekuk, and Aleknagik (Wood

River Village) all received canneries around the turn of the century and the population of Kanakanak was certainly affected by economic development in its vicinity. Between 1870 and 1885 three small settlements sprang up north of Kanulik and it is certain that one of these, and perhaps all three, arose in response to the commercial fishery. About 1890, two new communities on the west side of the bay, New Kanakanak-Bradford and Chogiung, later called Dillingham, and other small settlements on both the east and west sides were established around 1910 or just after. The years 1908-1910 can perhaps be called a high point of the fishing industry in this area. There was approximately ten canneries in Nushagak Bay at that time and it is likely that the permanent Eskimo population of the areas was from 700 to 800 people, a number that was augumented during the summer months by imported Oriental laborers, Eskimos from all over southwestern Alaska, and perhaps some Indians from the Iliamna Lake area. By 1920, after the influenza epidemic of 1918-1919, it is virtually certain that the permanent population of the bay did not exceed 500 persons.

Athabascans have occupied the Mulchatna River until fairly recent times and there is some indication that the lower section of the river was unoccupied during the early part of the historic period. The total period of Eskimo occupancy of the river in historic times appears to fall between 1890 and 1940, the period during which the settlement of Old Stuyahok was inhabited. It is tempting to suggest that the early inhabitants of this site were the first Eskimos on the river, but there are two small sites further up the river, the names of which are unknown, that may have been occupied briefly early in the twentieth century. The village of Kananakpok, a sizable settlement, belongs to the final fifteen or twenty years of Eskimo occupancy along the Mulchatna.

Old Stuyahok appears to have grown slowly and it would seem that the largest population on the Mulchatna occurred between 1920 and perhaps 1935 at a time when Kananakpok was also occupied. A reasonable estimate would place the number of inhabitants at that time between 90 and 125. In the late nineteenth and early twentieth centuries it is doubtful that the population ever exceeded 50 to 75. The lower river was abandoned around 1940 when the remaining inhabitants of the area moved onto the Nushagak River.

Reconstructing the settlement pattern along the Wood River is complicated by the fact that there are fewer references to these settlements in the sources than to those of any other part of the Nushagak River region. Of ten sites observed during the summer of 1964, only three can be dated with any degree of certainty and there are reliable population estimates for only two. Nevertheless, it is possible to make a few general statements. To begin with, there was no sizable population along the river until the period between 1850 and 1880. At that time Aleknagik (Wood River Village), Vuktuli, Imiak, and perhaps one other were inhabited and probably not much more. Wood River village began to grow after a cannery was constructed there in 1901 and it may have included as many as 100 residents, even in winter, throughout the first decade and most of the second decade of this century. In fact, this period may have witnessed the heaviest population of the Wood River as a whole during the historic period.

The Wood River appears to have been extremely hard hit by the influenza epidemic of 1918-1919. The Eskimo population of the river was virtually wiped out and people did not begin to move back into the area until the late 1920's at which time families from the Togiak region, the Kuskokwim River, and Nushagak Bay began to populate the shores of Lake Aleknagik. Except for two families living at Wood River Village, the Wood River is today uninhabited.

We now turn to a closer examination of the problem of population movements into the Nushagak River region. The earliest sources mention relations between the peoples of the area and those from other parts of southwestern Alaska, particularly the Kuskokwim River. In fact, John H. Kilbuck, the pioneer Moravian missionary on the Kuskokwim, claimed that the Eskimos of that river often spoke to him of a "warrior people" who once lived along the river and a remnant of which, in the 1880's, resided on Nunivak Island and in a village or two at the mouth of the Nushagak River. At one time, according to Kilbuck's informants, these people occupied the lower Kuskokwim River and Nelson Island, and they harassed the other Kuskokwim Eskimos. Eventually these "warrior people" were defeated and withdrew to the Nushagak and to Nunivak Island. After this the Kuskokwim Eskimos made frequent trips to the mouth of the Nushagak to fight the "warrior people." The Russians put a stop to the fighting. The Kuskokwim people told Kilbuck that the village of Ekuk on the east shore of Nushagak Bay was populated by "warrior people" (Kilbuk Papers, box 7, folder 1, no. 6).

Whatever may be the elements of truth in this legend, the earliest Russian sources make clear that militant hostility existed between the Kuskokwim Eskimos and those of Nushagak Bay. Berkh mentions that the chief success of the Korsakovski expedition was that the peoples of the Kuskokwim and the Glakmiut (Aglegmiut) were reconciled (Berkh, 1823, p. 47). Khromchenko a few years later in 1822 makes no reference to the Kuskokwim Eskimos but maintains that Fedor Kolmakov had, almost singlehandedly, made peace between the Aglegmiut and the Kiatagmiut. The Aglegmiut are described by Khromchenko as having been the most barbarous people along the Alaska coast between Bristol Bay and Norton Sound. However, warfare had greatly reduced their numbers, and they had found it necessary to take refuge with Kolmakov who presumably was successful in maintaining at least enough peace so that the fur trade could be carried on with both groups (Khromchenko, 1824, pt. 11, pp. 39-41). Early reports of general managers of the Russian-American Company also mention how the Aglegmiut, apparently displaced from Nunivak Island, sought protection from their enemies through friendship with the Russians at Alexandrovski Redoubt (Russian-American Company Records: Communications Sent, vol 9, no. 460, folio 349). Warfare had scattered them, but with Kolmakov's assistance, they grouped themselves in villages near the redoubt (Russian-American Company Records: Communications Sent, vol. 3, no. 164, folio 270). Zagoskin believed that the Aglegmiut and the Kiatagmiut were merely Kuskokwim people who migrated southward in the late prehistoric period to occupy the shores of Bristol Bay and the banks of the Nushagak River. The Aglegmiut thus stand identified as the "warrior people" of Kilbuck's Kuskokwim informants and it is likely that they fought not only with their immediate neighbors but with other peoples who came into the Nushagak Bay area.[97]

These comments illustrate the many changes which took place throughout the region. More detail is furnished in the following chart and maps of Figures III - 59, III - 60 and III - 61.

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[97] *Ibid.*

FIGURE III - 59

HISTORIC NATIVE PLACES AND CURRENT STATUS

BRISTOL BAY REGION

NATIVE GROUP	HISTORIC PLACES	EXISTING SETTLEMENT POPULATIONS 25 - 299	300 - 999	1000 +	STATUS UNKNOWN	SEASONAL CAMP SITE	ABANDONED	ANTIQUITY SITE
Togiagmiut	Living about Togiak Bay and River, their settlements were:							
	Aguliukpak (var. Agulukpak, Akuliukpak), 40 miles north of Dillingham. Population in 1880 -22; in 1890 - 83. Another village in this area is referred to as Agulowak (also shown as Nushagaqmiut place).					X		
	Eklik, on right bank of Togiak River, 44 miles east of Goodnews. Var. Ekiligamut, Ikanlinkamiut, Ikaliukha. Reported in Petroff's 1880 Census - 192; in 1890 population of 60. Reportedly now abandoned.					X		
	Kashaiak, on the right bank of the Togiak River, 1.3 miles east of Nayorurun River, 57 miles NE of Goodnews. Var. Kashiagamiut, Kissaiakh, Kissiak. Former village or camp reported by Petroff in 1880 with population of 181.					X		
	Kassiank, on right bank of Togiak River, five miles southwest of Kashiagamiut and 50 miles ENE of Goodnews. Var. Kassianmute, Kassiachamiut. Reported by Petroff in 1880, population - 615; population in 1890 - 50.						X	
	Kulukak, near head of Nushagak Peninsula, on west shore of Kulukak Bay, 43 miles west of village of Clark's point. Var. Kulluk. Former village or camp. Population in 1880 - 65.						X	
	Togiak and Togiak Station (southernmost), at head of the Togiak Bay, east of Togiak River and 43 miles east of Goodnews. Located about seven miles apart. Togiak population in 1880 - 276; in 1890 - 94. Togiak Station (or Owens), population in 1880 - 28; in 1890 - 14. The present site of Togiak is located 2 miles west of the mount of the river.	X						
	Tuniakpuk, on left bank of the Togiak River, 2 miles west of Kashiagamiut and 54 miles NE of Goodnews. Reported in 1880 by Petroff with population of 137. Var. Tuniapak, Tunniakhpuk.						X	
	Ualik, near head of Nushagak Peninsula on west shore of Kulukak Bay, 43 miles west of village of Clark's Point. Var. Ooaligamut, Ooailik, Ooalikh. Former village or camp reported in 1880; population 68.						X	
	Gechiak (var. Gechiang), on left bank of Togiak River just south of mouth of Gechiak Creek, 48 miles east of Goodnews. Former Eskimo village or camp, reportedly now abandoned, first reported in 1898.						X	
	Ungalikthluk, on left bank of Ungalikthluk River, 12 miles SE of Togiak. Shown by Petroff on 1881 map.					X		
Nushagagmiut	Inhabiting the banks of Igushik, Wood, and Nushagak Rivers and the shores of Nushaqak Bay, their settlements were:							
	Agivavik, on the Nushaqak River north of Ekwok and south of New Stuyahok.						X	
	Akak (var. Akokpak), on bank of Nushagak River at mouth of Mulchatna River; former Eskimo village or camp listed as Akakpuk in 1890 Census.						X	
	Akuliukpak, on Lake Nerka (Pamiek) at Agulukpak River. Population in 1890 - 82. (Also shown as Togiagmiut place.)					X		
	Akulivikchuk, on Nushagak River, south of present-day Ekwok and north of the Kokwok River. Former village listed by Petroff in 1880 - population 72.						X	
	Anagnak, on Wood River 7 miles north of Dillingham. Former village listed as Anaknak by Petroff, population 87 in 1880. 2 miles upstream from present place of Wood River - Dillingham.	less					X	
	Angnovchak, Nushagak area (location unknown), former Eskimo camp or settlement listed as Anchovchamiut in 1890 Census - population 16.				X			
	Annugamok, near the Nushagak River on an eastern tributary. Var. Annugannok, Anookamok. (Location unknown.) Population in 1880 - 214.				X			
	Ekuk, Ekuk Spit on east shore of Nushagak Bay, 16 miles south of Dillingham. Eskimo settlement reported in 1828 as Ekouk and also as Ikuk. Present cannery settlement.	less						
	Ekwok, on west bank of Nushagak River at junction with Klutuk Creek, first reported in 1828. Present place.	X						

ABANDONED	ANTIQUITY SITE
X	
X	
X	
X	
X	
X	
X	
X	
X	

NATIVE GROUP	HISTORIC PLACES	EXISTING SETTLEMENT POPULATIONS 25 - 299	300 - 999	1000 +	STATUS UNKNOWN	SEASONAL CAMP SITE	ABANDONED	ANTIQUITY SITE
Nushagagmiut (Contd)	Elilakok, on left bank of Nushagak River, five miles south of Nunachuak. Established between 1860 and 1900 with population of less than 100.						X	
	Golok (var. Kalignak, Old Kpliqanek), on left bank of Nushagak River, 65 miles northeast of Dillingham. Eskimo village listed by Petroff in 1880. Present village of Koliganek has been moved 4 miles downstream.	X						
	Igivachok, in the Nushagak district (location unknown); population in 1890 - 31.				X			
	Igushik, south of mouth of Igushik River, 30 miles SW of Dillingham. Eskimo village listed in 1880 Census - 74.						X	
	Imiak, on southeast shore of Lake Aleknagik, 17 miles north of Dillingham. Var. Aleknagik, Seleniye Imyak, Abaknakik, Agoulouikatuk, Ahleknuguk, Alaknakik, Aliaknagik. Present place.	less						
	Insiachak, in the Nushagak district (location unknown), Var. Insaichamiut. Former camp or settlement listed in 1890 Census - 42.				X			
	Kakuak, 60 miles up Nushagak River (var. Nunachuak). Eskimo village.					X		
	Kokwok, on right bank of Nushagak River, near mouth of Kokwok River, 36 miles NE of Dillingham. Population in 1880 - 104; 45 in 1890.						X	
	Inakpuk, on right bank of Nushagak River, 16 miles NE of Ekwok, former Eskimo camp or village, from 1910 manuscript map by Fassett, USBF.						X	
	Kanakanak (var, Chogiung), on right bank of Nushagak River at Bradford Point, 4 miles southwest of Dillingham. Population in 1890 - 53. Part of present Dillingham vicinity.	less						
	Kanulik, at head of Nushagak Bay, 2 miles NE of Nushagak and 6 miles SE of Dillingham. Var. Kanoolik, Karulik, Nunnungynakok. Reported by Petroff in 1880 Census - 142. Population in 1890 - 54. Reportedly now abandoned.						X	
	Mulchatna, near Nushagak River on Mulchatna River. Var. Malachatna, Molchatna. Former Eskimo camp or settlement reported by Petroff in 1880 Census, population 180.						X	
	Nushagak, at Nushagak Point, southeast of Dillingham. Former Eskimo village, the site of Alexandrovski; Redoubt established in 1819.						X	
	Stugarok, at Clark's Point on east shore of Nushagak Bay, 14 miles S of Dillingham. Var. Clark's Point. Site of former Eskimo village or camp recorded in the 1890 Census - population 7. Present cannery area.	X						
	Stuyahok (var. Stuyarok), on Mulchatna River 75 miles northeast of Dillingham; may have been first settlement of Eskimos on the river; abandoned around 1940 when remaining inhabitants moved to Nushagak River.						X	
	Tikchik, on north shore of Tikchik Lake, east of Tikchik River and 65 miles N of Dillingham. Var. Tuk-shik-ha-mut. Eskimo village reported in 1880 Census - population 38.						X	
	Trinachak, in the Nushagak district, location unknown, former Eskimo village recorded in 1890 Census - population 20.				X			
	Tunravik, on right bank of Nushagak River, one mile northeast of junction with Tunravik Creek. Established between 1860 and 1900 with population of less than 100.				X			
	Vuikhtulik, on north shore of Aleknagik Lake, 30 miles NNW of Dillingham. Var. Vuktuli. Former Eskimo village or camp recorded in 1880 - population 51 (Petroff).					X		
	Yaoherk, location unknown, no information available except notation that it may be same as Ekuk (if Ekuk site of present cannery settlement).				X			
Kiatagmiut	Inhabiting the Kvichivak River and Lake Iliamna, their settlements were:							
	Chekok, on north shore of Iliamna Lake, 3 miles NE of Chekok Point and 21 miles east of Iliamna. Var. Chikak. Eskimo village, now abandoned, listed in 1880 Census - population 51.						X	
	Kakonak, on south shore of Iliamna Lake, 23 miles south of Iliamna. Var. Kakonak, Kokonak. Eskimo village with 28 population in 1890.					X		

NATIVE GROUP	HISTORIC PLACES	EXISTING SETTLEMENT POPULATIONS 25 - 299	300 - 999	1000 +	STATUS UNKNOWN	SEASONAL CAMP SITE	ABANDONED	ANTIQUITY SITE
Kiatagmiut (Contd)	Kaskanak,1) on right bank of Kvichak River where it flows from Lake Iliamna, 35 miles NE of Dillingham. Var. Kaskanek, Koskanok, Kaskinakh. Eskimo village first mentioned by Petroff in 1880 Census (population 119). Population in 1890 - 66. Present place of Igiugig2) across river.	less2)					x1)	
	Kichik, on west shore of Lake Clark near mouth of Kijik River. Var. Kijik, Keechik, Keeghik, Keggik, Keygik, Kichak, Lake Clark Village, Nijik, Nikhak, Old Keegik. Former village reported in 1880 with population of 91. Lesli Expedition reported "Kilchikh" as the permanent village located about 9 miles up the Kijik River and "Nikhkak" as the salmon season fishing village on the shore of the lake. Hodge reported in 1907 Kichik as an Eskimo village and Kiichik an Indian village, both with the 1880 population of 91.*					X		
	Kogiung, on east bank of Kvichak River at Graveyard Point; on Bristol Bay at mouth of Kvichak River. Var. Koggiung. Eskimo village reported in 1880 Census - population 29; 133 in 1890; and 533 in 1900. Present place.	less						
	Kvichak, on east bank of Kvichak River, 17 miles NE of Naknek. Eskimo village reported by the early Russians and published in 1898 by USGS. Present place. Another Eskimo place called Kvichak, mentioned by early Russian explorers and cited in 1890 Census is present day Levelock (population 88 in 1960), about 12 miles upstream from present day Kvichak.	less						
	Nogeling, on north shore of Iliamna Lake, at mouth of Newhalen River, 2.5 miles south of Iliamna. Var. Newhalen, Noghelingamiut; Eskimo village listed in 1890 with population of 16. There evidently were two villages of these people on Newhalen River in 1890, the other being Noghelin Painga located 1/2 mile further south. Present day Newhalen.	X						
Aglemiut	Inhabited territory from the mouth of the Nushagak River to Heiden Bay. Their villages were:							
	Igagik, on south bank and near mouth of Egegik River on north coast of Alaska Penin., 38 mi. SW of Naknek. Var. Agouyak, Egegik, Ugagik. Reported in 1888.	X						
	Ikak,1) site of Eskimo village on Alaska Peninsula near mouth of Savonoski River, at head of Iliuk Arm Naknek Lake, 21 mi. NW of Mount Katmai. Reported in 1890. Abandoned after 1912 Katmai eruptions. Var. Savonoski. Another Savonoski now exists on the south bank of the Naknek River, 5 mi. ESE of Naknek.	less2)					x1)	
	Kingiak, on north bank of Naknek River near its mouth, on north coast of Alaska Peninsula. Var. Naknek, Pawik, Suwarof. Originally an Eskimo village reported in 1821. The 1880 Census listed the name "Kinghiak." Population in 1890 - 51. Present place of Naknek.	X						
	Paugwik, on the south bank of the Naknek River. Var. South Naknek. Eskimo and Aleut village listed in 1880 Census with population of 192 including Kingiak. The 1890 population was 93. Present place of South Naknek.	X						
	Ugashik, on the northwest coast of the Alaska Peninsula, east bank of Ugashik River 9 miles from its mouth. Var. Oogshlik, Ugagak, Ungashik. Eskimo village listed by Petroff in 1880 with a population of 177; 154 in 1890. Present place.	less						
	Unangashik, near Stroganof Point, SW entrance to Port Heiden. Var. Oonangashik. Former Eskimo village listed in 1880 Census with population of 37; 190 in 1890.						X	
	Meshik, present day Port Heiden, recorded 1902 probably there earlier or associated with Unangashik.	X						

Sources: Hodge, Freder
1907.

Orth, Donald
Office, 1

Oswalt, Wend

Swanton, John
United Sta

VanStone, Ja

Compilation

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*Kijik is reported as Tanaina Indian site in Cook Inlet Region; Nikhak is also name used for Tanaina Indian fishing camp at this location - also reported in Cook Inlet Region.

ANTIQUITY
SITE

Sources: Hodge, Frederick Webb (ed.). Part I and Part II: *Handbook of American Indians North of Mexico.* Washington: Government Printing Office, 1907.

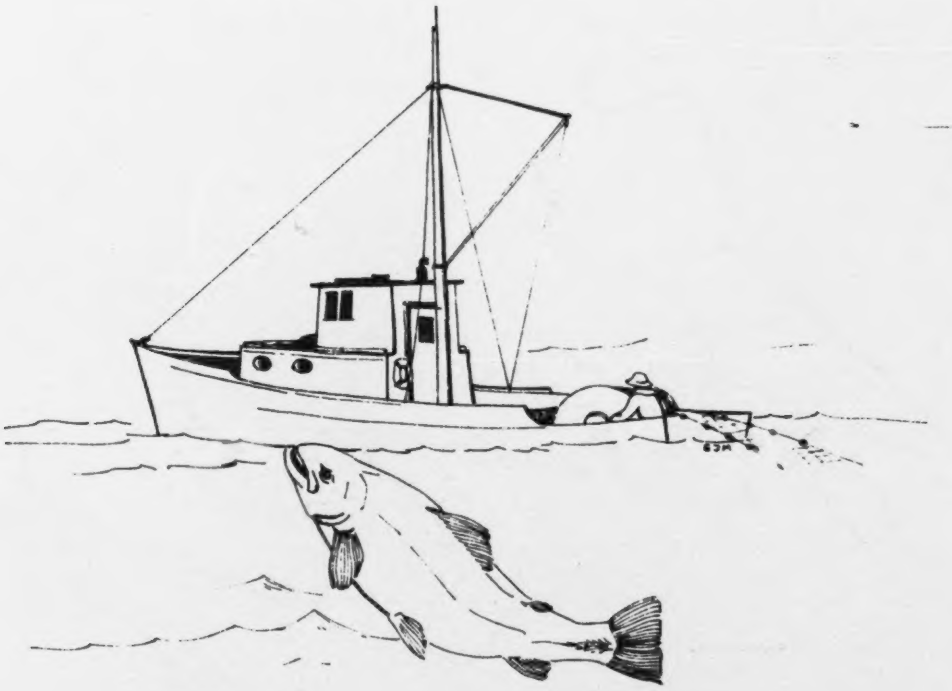
Orth, Donald J. *Dictionary of Alaska Place Names*, Geological Survey Professional Paper 567. Washington: United States Government Printing Office, 1967.

Oswalt, Wendell H. *Alaskan Eskimos.* San Francisco: Chandler Publishing Company, 1967.

Swanton, John R. *The Indian Tribes of North America.* Smithsonian Institution, Bureau of American Ethnology, Bulletin 145. Washington: United States Government Printing Office, 1953.

VanStone, James W. *Eskimos of the Nushagak River.* Seattle: University of Washington Press, 1967.

Compilation by David M. Hickok, Federal Field Committee for Development Planning in Alaska.



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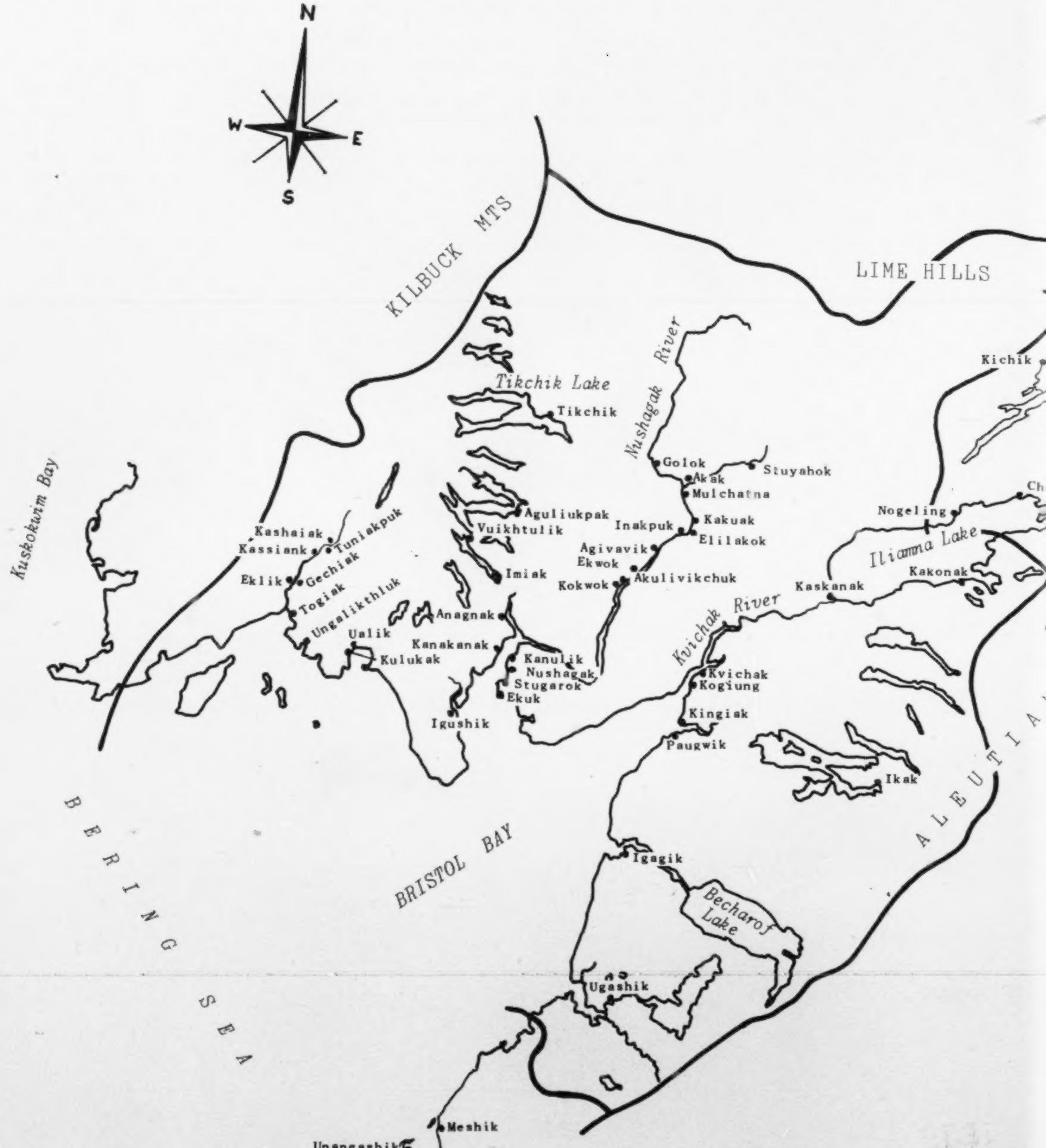
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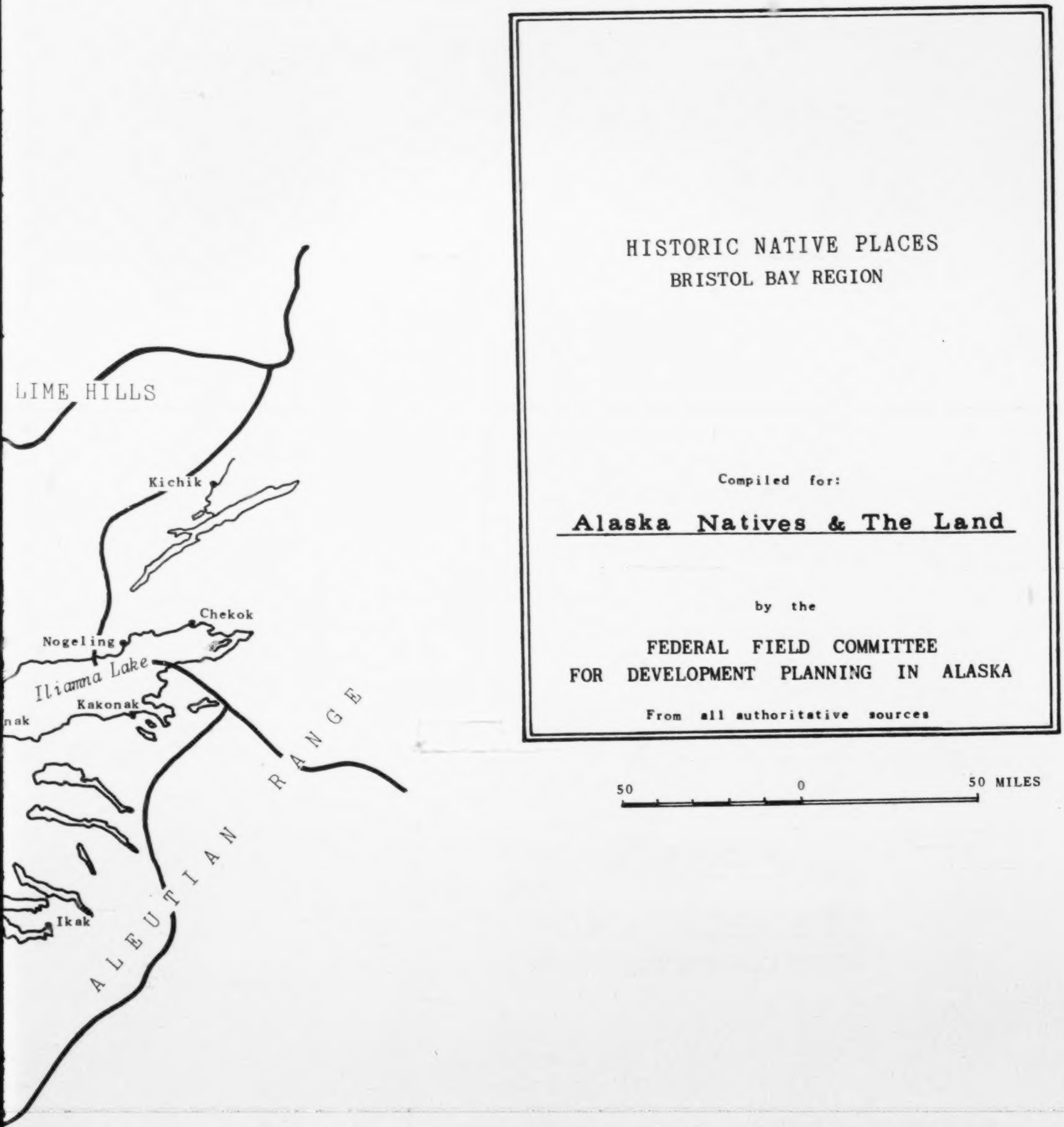
FIGURE III · 60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HISTORIC NATIVE PLACES
BRISTOL BAY REGION

Compiled for:

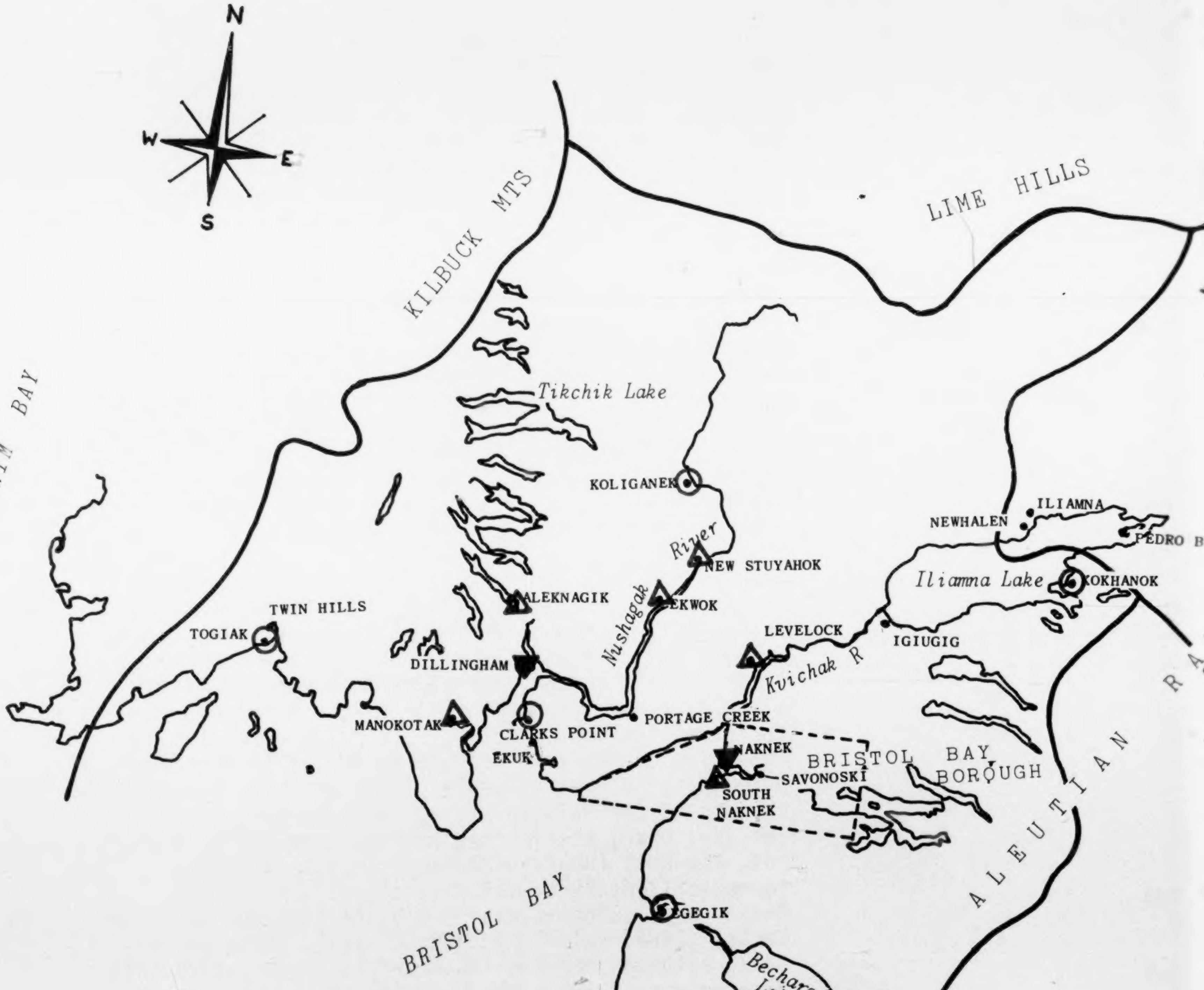
Alaska Natives & The Land

by the

FEDERAL FIELD COMMITTEE
FOR DEVELOPMENT PLANNING IN ALASKA

From all authoritative sources

IGURE III - 60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PORTAGE CREEK
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EGEGIK
Becharof Lake
PILOT POINT
UGASHIK

FIGURE III - 61

CURRENT PLACES
with
NATIVE POPULATION
BRISTOL BAY REGION

INDICATING VILLAGE OWNERSHIP STATUS

- △ Surveyed
- ▼ Surveyed & Deeds issued
- ○ Survey proposed

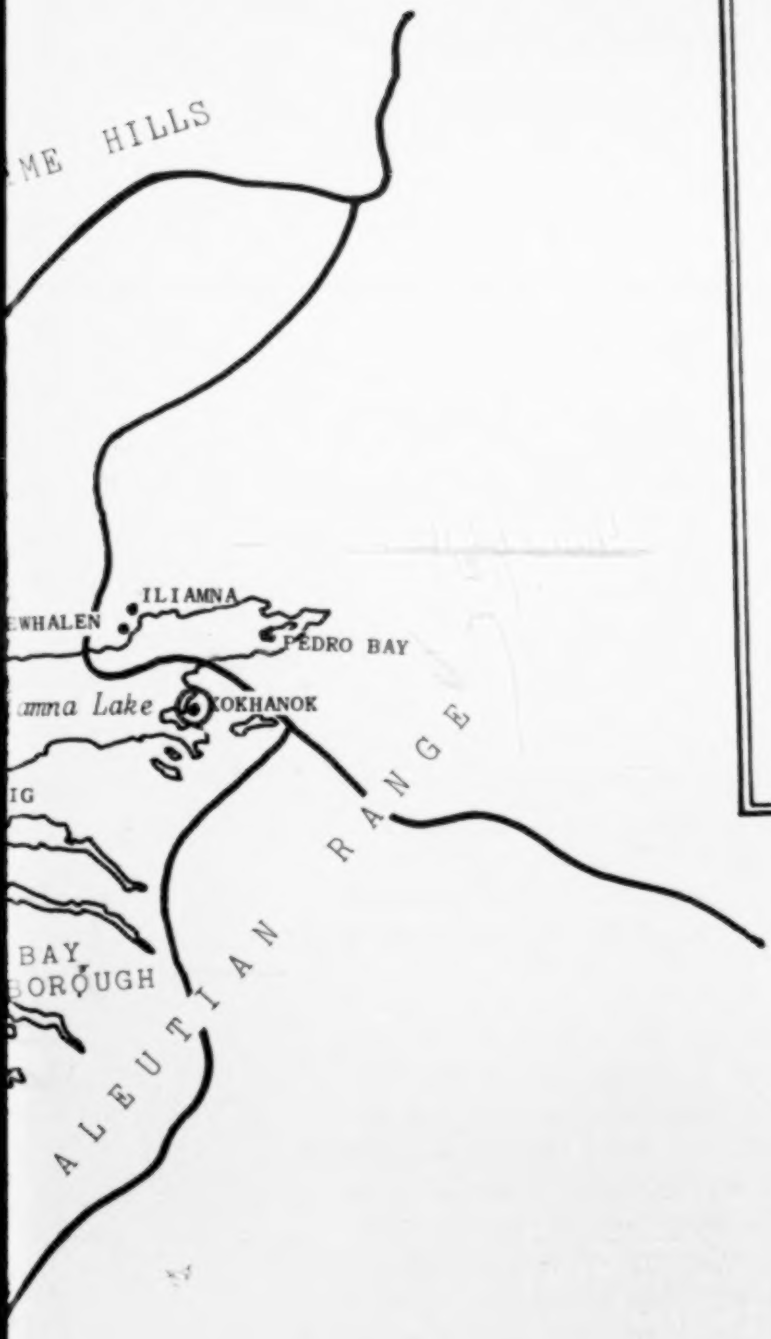
Compiled for:

Alaska Natives & The Land

by the

FEDERAL FIELD COMMITTEE
FOR DEVELOPMENT PLANNING IN ALASKA

From all authoritative sources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URE III - 61

Environmental Livelihood Patterns

Within the Bristol Bay Region the yearly cycle of subsistence activity in the Nineteenth Century was fairly much the same for the Togiagmiut, Nushagagmiut and the Kiatagmiut in that there was seasonal movement between coastal maritime habitats and the interior riverine habitats. The Aglemiut, on the other hand, depended more greatly upon maritime resources and coastal lagoon and peripheral lake habitats in the narrow Alaska Peninsula north of the Aleutian Range.

A portrayal of the yearly subsistence cycle in the 1880's and 1890's provides some perspective for the change that has produced the partial wage-partial subsistence activity current within the region today.

The following comments trace salient points of the Nineteenth Century livelihood pattern of the Nushagak River Eskimo.

> *Fall.* When the first snow fell in early October, the Nushagak River Eskimo men returned to their permanent villages along the river from their hunting and trapping camps in the interior. They traveled down the tributaries of the Nushagak or perhaps along the coast and into the bay in the case of people living in that area....By the middle of October most people would be settled for the winter and occupied with repairs to houses and caches. In early fall some trapping seems to have been done near the villages. Deadfall traps are mentioned as having been set for marten at this time (Elliott, 1886, p. 381). When ice formed on the river about the end of October or early in November, traps for whitefish were placed under it and grayling were taken with hooks through holes in the ice.
>
> How much hunting was done during this period is not certain, but it is likely that caribou were hunted near the villages and perhaps for some distance up the river. Elderly informants at Dillingham reported that inhabitants of the bay region near the turn of the century made lengthy fall hunting trips up the river and into the Mulchatna country for caribou, but this is not mentioned in any of the sources. These same coastal peoples could take ling cod and blackfish through the ice not far from their villages. Also in November families from Chogiung [Dillingham] and other bay communities would travel up the Wood River to Lake Aleknagik in order to fish for trout through the ice with hooks. Frozen trout, stacked like cordwood, were brought back to the villages by dog team.

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Winter. It is probable that, during the aboriginal period, most fall activities in both river and coastal communities ended in early December when the severe winter weather settled in for good. By that time the inhabitants had repaired their houses and made themselves as comfortable as possible. At this time of year the permanent river villages were fully occupied and all mobility had ceased. (After historic contact, however, there appears to have been greater mobility during the winter months.) Fall trapping continued throughout the winter and, according to informants, steel traps were uncommon and most of the foxes and beaver were trapped with snares and deadfalls....

An elderly man at New Koliganek said that the inhabitants of Tikchik near the mouth of the Tikchik River trapped further up the river during the winter and hunted caribou along the Nuyakuk River and north of it on the vast tundra between the Tikchik and Nushagak rivers. Caribou were plentiful at that time, according to the informant, but moose were very scarce. The Tikchik hunters and trappers apparently left their families in the village and seldom ranged more than a two days' journey from home...

Spring. In late February or early March many Nushagak River families prepared to move from their permanent communities on the riverbank to temporary camps along streams in the mountainous country of the interior. Boats and all household equipment were moved by dog sled and apparently some families did not leave their villages until April. The main occupation at this time of the year was the taking of fur-bearing animals. The most valuable pelts, at least toward the end of the Russian period, were beaver, otter, red fox, bear, arctic fox, marten, lynx, mink, muskrat, and wolf (Russian-American Company Records: Communications Sent, vol. 38, no. 115, folio 29). Beaver were taken mainly by digging them out of their houses (DRHA, vol. 1, p. 329; Elliott, 1886, pp.381-384), although the Russian-American Company officially disapproved of the method because of long-range harmful effects on the beaver population (Russian-American Company Records: Communications Sent, vol. 16, no. 467, folio 178). Caribou were also hunted extensively at this time of the year, probably mainly with rifles or old flintlock muskets by 1880 (DRHA, vol. 1, p.329), although Petroff insists that as late as 1890, Eskimos with firearms were infrequently encountered in the area (1891, p.6).

While the river Eskimos were in the interior hunting caribou and trapping fur-bearing animals, coastal residents of Nushagak Bay, in addition to interior trapping, hunted seals in the Point Protection or Igushik areas. Toward the close of the nineteenth century, at least, most of the hunting was done with rifles from shore. Dip netting for smelt was also a late spring activity for coastal families. Some individuals stated that occasionally river Eskimos would come down to the coast in the late spring to hunt seals and then would stay on to fish, perhaps selling a few fresh fish to canneries in order to obtain money to buy food and other supplies before returning upriver.

Summer. By the middle of June most river families were concentrated in their winter villages to prepare for salmon fishing. This meant repairing their traps, constructed of split spruce strips, so that they could be used effectively when the fish began to run. The mouth of the Nushagak River was a favorite spot for fishing with traps, while at the rapids on the upper Nuyakuk salmon were taken with spears and dip nets (Elliott, 1886, pp. 381-384; Cobb, 1907, p. 32; Bower, 1926, pp. 108-110). Although some Nushagak River families stayed on the river to fish during June and July, many more migrated to the coast to fish and visit the trading post. This was probably increasingly true after commercial fishing was introduced. However, even prior to this time, the pattern seems to have been for the river Eskimos to visit the Nushagak post in early summer with their furs and then either remain to put up fish or return up the river. The above-mentioned New Koliganek man, speaking of the period just before 1900, said that in early summer not long after the river ice broke up, the residents of Tikchik would go down to the Nushagak post to trade their furs. They traveled down the Nushagak River in large boats covered with caribou skins or brown bear hides that were similar to the type already described. The trappers would trade their furs at the post and receive tea, flour, sugar, tobacco, gun powder, crackers, etc. in exchange. Trade was also carried on with coastal peoples, with products of the interior being exchanged for seal oil and other coastal products. The Tikchik people apparently did not stay long on the coast but returned to their village in order to be on hand to catch and dry salmon. When the time came for the return trip, the large boats were abandoned or traded for small sealskin-covered kayaks and the villagers, often traveling as a group, returned to Tikchik by way of

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the Wood River and the lakes. This was considered to be much easier than paddling up the Nushagak and Nuyakuk rivers, since there was only the one extensive portage from the Wood River Lakes system to the Tikchik Lakes.

Fish caught by Nushagak area residents were dried on racks. The heads were sometimes buried in the ground and allowed to rot slightly before being eaten. Fish eggs were put up in seal oil and considered a delicacy to be eaten during the winter festivals (Elliott, 1886, pp. 381-384; SPG Proceedings, 1888, pub. 1888, p. 29). As previously mentioned, there always seems to have been work for some Eskimos at the canneries , usually on a day-to-day basis.

Walrus hunting was an important activity in Nushagak Bay and surrounding area during the Russian period. Between 1827 and 1830, 452 *puds* of walrus tusks were shipped from Alexandrovski Redoubt and in 1838 alone nearly 200 *puds* (Russian-American Company Records: Communications Sent, vol. 12, no. 256, folio 152; vol. 16, no. 479, folio 189). By 1890, however, most of the animals had disappeared. Reference has already been made to the fact that the Eskimos of the area, presumably the Aglegmiut, were skilled ivory carvers. They carved paper cutters, salad forks, salt spoons, watch chains, and other objects for sale to the post and to white cannery workers (Swineford, 1898, pp. 162-163). Beluga were hunted along the shores of Nushagak Bay throughout the summer months, and moulting birds would also be taken and eggs gathered to put up in seal oil.

By the last week in July the great runs of salmon had passed and, except on the upper river, fishing ended. In mid-August many men ascended the tributaries of the Nushagak for the interior, leaving the women and children in the villages to watch over the full fish caches. Caribou hunting was good at this time of the year and many skins were secured for winter clothing. During the Russian period fall caribou skins were taken in trade at the Nushagak post for shipment to Sitka from where they were distributed to posts in areas where caribou were not plentiful (Russian-American Company Records: Communications Sent, vol. 9, no. 318, folio 478). In mid-September the fur of the beaver would again be in prime condition and these animals were taken in wooden deadfalls or their dams were broken and the water allowed to run out, exposing the beaver. This hunting and trapping continued until the first snow fall in October when the men

> returned once again to their winter villages (DRHA, vol. 1, p. 329; Elliott, 1886, pp.381-384; Osgood, 1904, p. 18).
>
> The seasonal cycle described above is roughly the same for both the river Eskimos and those living on the shores of Nushagak Bay. Only in the spring did any major difference occur, when the coastal people did most of their sea mammal hunting.[98]

A comparative picture of the Eskimo of the Nushagak River region today (1964-1965) is also drawn from Van Stone. It is an important view since the indigenous population of this region resides close by the multi-million dollar salmon fishery of Bristol Bay. Naturally, the *degree* of subsistence reported in the following information varies in some proportion (not direct) to the success and cash received during the commercial fishing season.

> *Fall.* The Eskimos of the river villages of Ekwok, New Stuyahok, Koliganek, and Portage Creek usually return to their homes around the middle of August after having spent the summer in various locations on Nushagak Bay. The silver salmon are just beginning to run at this time and the run will continue for about two weeks, after which the salmon fishing will be over for the year. Families who did not put up fish during the summer will do so at this time. A few red and humpbacked salmon may still be working their way up the river in late August and a vigorous subsistence fishery is carried out in all the villages until the last silvers have passed. At this time too, many men hunt ducks in the sloughs near the villages where these birds flock preparatory to heading south. While duck hunting the men may also look for brown bears since these animals like to come to the river bank to fish for spawned-out salmon.
>
> The moose hunting season opens on the twentieth of August and by that time many families have put up their fish for the winter. Many have completed their subsistence fishing at summer fish camps on the bay and when the fishing boats come up the river in late summer they are sometimes loaded with dried fish and also with supplies for the winter that have been purchased with money earned during the commercial fishing season. The salmon canneries frequently provide a grubstake to fishermen; this has either beer taken out of their summer income or advanced against the next summer's earnings. In this way the canneries are able to bind a particular fisherman from year to year.

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[98] *Ibid*, pp. 122-129.

Most of the fall moose hunting takes place in the Mulchatna River region or along the Kokwok River where many moose have spent the summer near lakes to escape the mosquitos and flies. Some men leave their villages for these areas nearly as soon as they have deposited their families at home. However, a moose killed early in the season is difficult to preserve and since the season extends through the end of the year, winter trapping and hunting are frequently combined. The Nushagak River is not noted for an abundance of game animals. Moose hunting here is a relatively recent activity since the animals have moved into the general area only within the past twenty or twenty-five years. There are caribou in the Mulchatna and Nuyakuk river regions and these are also hunted in winter and fall. All informants, naturally enough, speak of their hunting activities strictly in terms of the legal seasons.

For late summer and fall travel on the Nushagak River and its tributaries, the large commercial fishing boats which the Eskimos own for their summer fishing on the bay are generally not used. A wide variety of skiffs seen around the villages reflect a tendency to copy the more sporting commercial models or actually to buy them through mail order catalogues or dealers in Dillingham. The typical Nushagak River skiff, however, is constructed in the village with hardwood obtained from a store....

The late summer and fall in a Nushagak River community is a time of considerable activity and preparation for the long winter months. Some men make repairs to their houses or make one or more trips to Dillingham in their fishing boats to pick up stove oil, lumber, or large food orders. Others pull their fishing boats out of the water for the winter. The care and maintenance of the fishing boats, the Eskimo's single most valuable and expensive possession on which he depends for mobility throughout much of the year and for most of his yearly income, takes a great deal of time and effort at all seasons.

On a typical early fall day at New Koliganek in 1965 people were observed at a variety of tasks that can be considered characteristic of village life near the end of the fishing season. Some women were cutting fish while their husbands and older sons were stringing these on racks to dry in the sun. A man was hauling logs from upriver behind his skiff preparatory to building a storm shed on the front of his new house. Another man was building an elevated cache from old lumber purchased in Dillingham when a cannery was demolished. Two men related by marriage were repairing the engine of the older man's fishing boat; changing the oil, cleaning the spark plugs, starting and restarting the motor. A man and his two young sons were engaged in completely rebuilding an old skiff while several women washed clothes in gasoline-powered washing machines and took advantage of the sunny, warm weather to hang them up to dry.

Winter. The legal trapping season for most fur-bearing animals in the Nushagak River region has, in recent years, opened on November 10. Some mink trapping takes place in the late fall and early winter but only a few trappers are seriously interested in this animal. Even those who do trap for mink do not pursue the activity vigorously, but are usually content to set a few traps close to the village. Several New Koliganek individuals stated that mink trapping in the vicinity of that village amounted to practically nothing; a trapper would be fortunate to take five or six animals. Further up the river the trapping for all fur bearers is better, but not many New Koliganek residents care to make the trip. Trapping is also spoken of as being very good in the sloughs and small lakes that characterize the lower river. A New Koliganek man seemed to think that there was no point in trapping at all unless it was possible to earn at least $2,000 during the winter. However, the prices paid for mink and other furs have dropped and it is almost impossible to make this much. Another trapper noted that about seven years ago he took 30 mink, 10 otter, and earned $1,100. The mink season ends on the thirty-first of January and there is no limit to the number of animals that a trapper may take.

Winter travel in the Nushagak River region is almost exclusively by dog team although at least two men, one at New Koliganek and the other at New Stuyahok, have experimented with snow-mobiles. Few men have more than five or six dogs and many use only three. [In the last few years snow machines have rapidly replaced many dog teams, although the use of dogs is still fairly common.]....

Winter is not a time of intensive subsistence activity. There is some caribou hunting, particularly by upriver residents of the village of New

Koliganek. In the foothills of Ketok Mountain the caribou hunting is usually good and the villagers do have to go far to take them. In November and December moose are frequently hunted along the wooded tributaries of the Nushagak. There is fishing through the ice, particularly with hooks for grayling and pike. One New Koliganek informant said that some men set nets under the ice for whitefish (but the author's impression was that winter fishing of any kind is more talked about than actually done), but the people depend mostly on the dry fish they put up during the summer and early fall. Hares, ptarmigan, and other small game are frequently taken and much time is spent in hauling firewood. This midwinter period, then, is one of relative inactivity and it parallels that of the early contact period when the great festivals and dances in the *kashgee* were performed. Today church holidays during the winter and early spring, particularly Russian Christmas, are important events and much visiting takes place between villages at this time. Some men will make trips by air or dog team to Dillingham for supplies once or twice during the winter.

Spring. Following the midwinter lull, spring trapping begins. The beaver season opens on the first of February. Trappers are more energetic in their efforts to take this animal, particularly those Eskimos living at Ekwok who trap up Klutuk Creek or in the low country on the east side of the river. New Koliganek trappers trap along the Nushagak above the mouth of the Nuyakuk. The limit on beavers is 15 animals and it has been unusual in recent years for a trapper to receive more than $20.00 each for the blankets he takes. New Koliganek trappers are particularly discouraged about the chances of making good money by trapping beaver because of the low price paid even for prime pelts. Although all trappers are aware that pelts sent to buyers in Seattle and other southern locations bring a higher price, a relatively small amount of fur is exported directly from the villages. Most trappers take their furs to Dillingham in March at the time of the annual "Beaver Round Up" when fur buyers visit the town in order to purchase furs. In 1965 the "Round Up" was held from March 18 to 21, following the end of the short beaver trapping season. This is a time of celebration with dog races, dances, and other activities, as well as much drinking. The local airline and various independent pilots offer special rates from the villages to Dillingham at this time and many families make the trip.

In spite of the local emphasis on beaver trapping, the people of the Nushagak River region do not really rely heavily on income derived from trapping. At best, money obtained through the sale of furs is a valuable supplement to income earned during the summer months and carries many Nushagak families through a period of the year when there are few opportunities to obtain cash. Nor do the trappers devote a great deal of time and energy to the activity. New Stuyahok informants, when questioned concerning the amount of time spent on the trap lines, noted that it was unusual for a trapper to be away from the village for more than four or five days at a time. The men almost always want to be back in the village for the weekend, particularly for the showing of films on Friday nights. Therefore, their trap lines are always located near the village and they make no elaborate arrangements for camping in the bush. One New Stuyahok informant said that when he was a small boy, his father had a trapping cabin on the Kokwok River but that it had not been used for many years. In recent years, he has trapped due west from the village and more often than not he can visit his traps and return the same day.

Beginning in mid April, ducks and geese arrive in the Nushagak River region and there is good hunting throughout the area, particularly in the sloughs near the villages.

Summer. By late in May the four Nushagak River villages are virtually abandoned as the men with their families move to Bristol Bay to take part in the commercial salmon fishing. King salmon begin the run shortly after the first of June and most men have their boats in the water well before this date. In recent years Koliganek-New Koliganek families have camped along the beach just north of Snag Point, while some Ekwok families camp less than a mile north of Wood River Village. Since Ekwok and Portage Creek are the villages closest to Nushagak Bay , many families remain there all summer to put up dry fish. The men may pay quick visits to the settlements during periods when the fishing is closed. In the case of Portage Creek these visits are made by boat, but at Ekwok several villagers may charter a small plane and arrange for the pilot to return for them before the next fishing period opens. Beginning in 1963, families from New Stuyahok established a fish camp at Lewis Point on the north bank of the Nushagak about fifteen miles above its mouth. The subsistence fishery is thought to be better there than in the vicinity of Dillingham and at the same time the men can easily visit their families during the closed periods. The women have a good supply of dried salmon put up by the time the commercial fishing season is over.

Although the importance and all-pervading influence of commercial fishing in the Nushagak River region tends to overshadow the subsistence fishery, it is necessary not to underestimate the importance of the latter in the economy of the river Eskimos. The fish put up and dried in the summer fish camps along the bay or during late summer and early fall in the river villages is of vital importance as a winter food supply for both humans and dogs. The subsistence catch of salmon for the Nushagak River, including Nushagak Bay, in 1965 was officially listed by the Dillingham area office of the Alaska Department of Fish and Game as 135,900 fish and there is reason to believe that this figure is in error on the conservative side (Nelson and Siedelman, n.d.).

As previously noted, along the river the women prepare fish for drying after the men have checked and emptied the nets. At summer fish camps on the bay women handle every aspect of the subsistence fishery except for the construction of drying racks. A fish prepared for drying is slit down the underside in such a way that the backbone is separated from both sides. If the fish are for human consumption, this backbone section is usually removed, but if they are intended for dog food, it may be left attached. The outside surfaces of the fish are sliced in order to facilitate drying. Fish racks are of relatively simple construction consisting of sturdy corner posts, connected at the top by slender horizontal poles between which a horizontal series of even lighter poles are hung. The fish, tails up, are draped over these poles. The racks often have a roof frame so that a canvas cover can be hung to protect the drying fish from rain. When the fish are first hung, flies lay eggs on them, but if there is even a slight breeze and the fish are drying properly, the maggots drop off soon after they hatch. If the fish are intended for dog food, no particular care is taken to protect them from flies. If, however, they are for human consumption, the rack may be covered with canvas and the sides enclosed with frame planks, sheet metal strips, or sections of heavy cardboard. Then a slow fire of green wood, built in half an oil drum, is kept going in order

> to help dry the fish more quickly in wet weather and to keep off the flies. Fish that are only half dried may be boiled and eaten with seal oil that is obtained during the summer from Togiak people or permanent residents of Nushagak Bay.... nearly all Nushagak River men participate in the commercial fishery as fishermen and not as cannery workers. This means that they either own, or are in the process of buying, large fishing boats, or that they work on the boats usually assisting fathers, brothers, or other relatives. These boats are frequently obtained through the canneries, but some fishermen have purchased them with the aid of [a credit association].[99]

These two portrayals of the environmental dependence of the Nushagak Eskimo are not, of course, completely representative of the Eskimo north to Togiak Bay or south and west along the Alaska Peninsula. There are naturally differences due to local fish and wildlife habitat changes and species occurrences. The pattern is, however, typical and important for that reason.

ALEUTIAN REGION

Ethnic Settlement Patterns

"Perhaps the most highly individualistic of all the Eskimos were the Aleuts, whose descendants still inhabit the Aleutian Islands. Until two centuries ago they were the largest single Eskimo group, with a population about 20,000 strong."[100]

Until the time of initial historic contact with Bering and Chirikov in 1741 and succeeding Russian influence, the culture of the peoples of the Aleutian Region had been developing over thousands of years. In Alaska the earliest skeletal remains of man from a clear context occur at the Chaluka site on Umnak Island, dating around 2000 B.C.[101] What we know of this period prior to initial contact is limited by the observations of the first Russians and by subsequent archeological investigation.

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[99] *Ibid.*, pp 131-138.

[100] T. P. Bank, "The Aleuts," *Scientific American,* 1958.

[101] Oswalt, *op. cit.*

As the Eskimo migrated from Asia to North America, it is generally supposed that movements occurred in two directions--north and east via the arctic littoral rim and east further to the south across the Bering Sea and in another possible way from the Kuriles to the Aleutian Chain. Those who settled in the Aleutian Islands at least 3,000 years ago were the ancestors of the Aleut people. The movement into and across the Aleutians was never a mass migration of large numbers of people, but rather consisted of sporadic travel by small family groups over a long period of time. Gradually the Aleut population spread itself thinly across the whole Aleution Archipelago. Although the western Aleuts had little opportunity to marry outside their own island groups, in the eastern part of the chain there developed frequent mixing between Aleutian and mainland Eskimos.

There are two main subdivisions of the Aleuts distinguished by difference primarily in dialect: the Atkan division inhabited Andreanof, Rat and Near Islands; the Unalaskan division inhabited the Fox, Shumagin and Pribilof Islands and the Alaska Peninsula and encompasses the existing majority of Aleut population.

In 1774 the following description was given of the Aleutian Islands comprising the Atkan division:[102]

Adak Island: It is not possible to give the exact number of people living on the island as they often move in whole families from one island to another in large skin-boats, pass straits and settle where they like.

Kanaga Island; On the island is a high mountain from the top of which the people obtain burning sulpher; at the base are springs of hot water in which they cook fish and meat. About 200 men and women inhabit the island,

Chetkin: In the valleys are hot springs. There are no rivers, and it is inhabited by about 400 families.

Tagadak Island: The island not only has no rivers and no fish, but also is lacking in edible roots. The whole coast is so rocky that there are no landing places for ships, not even skin-boats. There are about 400 families on the island.

Atkha: The island has many rivers flowing into the sea. There are fish and many edible roots. It is inhabited by about 60 people.

Amlia: There are about 600 inhabitants on the island.

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[102] Waldemar Jochelson, *History, Ethnology and Anthropology of the Aleut*, Anthropological Publications, Carnegie Institution of Washington Publication 432, 1933.

From the harsh terrestrial and marine environment of the Aleutians, the Aleuts developed a rich culture and secured a well-balanced livelihood from the rich fauna of the sea, but this was not to last long after Bering's contact with these people in the Shumagin Island group.[103]

> Unhappily the Aleuts' flourishing culture and economy did not long survive this discovery. When the Bering expedition returned to Russia and told of the vast herds of fur animals in the North Pacific, fortune hunters started a stampede almost equal to the great Klondike gold rush that came some 150 years later. Adventurers, thieves, exiles, murderers and princes alike set out to plunder this remote region of its treasure. A tide of greed, cruelty and bloodshed swept over the Aleutian Islands. The Aleuts fought back, but they were overwhelmed by the superior weapons of the Russian hunters. Whole villages were wiped out; the population was decimated not only by guns but also by smallpox, measles, tuberculosis and pneumonia.[104]

Due to these causes, the Native population of the Aleutian Islands was reduced to 2,247 (Veniaminoff) in 1834 and to about 1,400 in 1848 (Father Sharesnekov). After the smallpox epidemic of that year an estimated 900 Aleut people were all that were left. By 1864 mixed bloods had increased the population in the Aleutians to 2,005 (Dall), and finally the 1890 Census indicated only a total of 1,702 persons of whom 968 were Aleut and 734 mixed bloods. Thus in 150 years a once hardy people were subjected and reduced to at least one-twentieth of their former aboriginal population level!

Throughout the later period of Russian occupation many Aleut people were displaced to Kodiak Island and the Cook Inlet and Bristol Bay regions by the fur traders--simultaneously many others moved voluntarily to benefit from the trade affects of Russian posts.

This population decrement continued under United States administration until 1910 when an Aleut population of 1451 was reported.[105] How many of this low population were of mixed blood is difficult to conjecture as it is in the increase to 5,599 reported by 1939.[106]

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[103] For detail on the various Russian voyages of exploration and hunting beginning in 1744 see Waldemar Jochelson, *History, Ethnology and Anthropology of the Aleut.*

[104] Bank, *op. cit.*

[105] George W. Rogers after U. S. Department of Commerce, Bureau of the Census, *Indian Population in the U. S and Alaska, 1910,* Washington,D.C., U. S. Government Printing Office, 1915.

[106] *Ibid.*

In June of 1942 the Japanese attack Dutch Harbor, were repulsed and then turned their attention to Kiska and Attu in the western Aleutians. Attu village's population of 45 Aleuts was easily overrun and taken into captivity on Hokkaido.[107] They were finally released in 1945 following the Japanese surrender.

The effect of the Japanese attack on Dutch Harbor and Attu was to have much greater impact on the Aleut people.

Because of these attacks, nearly all of the civilian Native population of the Aleutians were moved under government auspices to southeast Alaska. This action evacuated some villages such as Kashiga, on Unalaska Island, which have never since been reoccupied despite the return of most Aleuts to the Aleutians after the war.

The Pribilof Islands are yet another story in Aleut history.

> St. Paul was first settled in the 1780's, when the Russians brought Aleuts to the Pribilof Islands for the taking of fur seals. During most of the intervening 180 years, the people have lived under conditions of semi-slavery and exploitation. First the Russians and then the Americans exercised total control over the local inhabitants, maintaining them for the sole purpose of manning the fur seal industry.
>
> The Pribilof Islands have since 1910 been under the jurisdiction of the U. S. Department of the Interior. Management has for some years been vested in the Bureau of Commercial Fisheries of the Fish and Wildlife Service. The government's prime objective is conservation, management and protection of fur seals. In addition, government responsibility has included providing for the health and welfare of the two Pribilof Islands communities - St. Paul and St. George. In the past, residents received free housing, clothing, food, household supplies, health care, education, and other services; these were supplemented by a limited but gradually increasing cash wage. As of 1962, all workers receive standard government wages in accordance with the type of work they perform and the period for which they are employed.
>
> St. Paul has all the external manifestations of the typical company town. It has an orderly layout and relatively excellent physical facilities. Employment is available to all residents, either on a permanent or seasonal basis. The price of these benefits has been dependence on a single industry

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[107] Clarence C. Hulley, *Alaska:Past and Present*, Portland, Binfords & Mort, Publishers, 1958.

over which the people have no influence, limited mobility, restricted political power, and a requirement for a cash wage to sustain existing living standards. All these conditions - physical, economic, social, political - are so different from other Alaskan communities as to make comparative evaluation meaningless. Recognition of the existing situation and characteristics provides the basis for future change.

Significant changes have begun occurring in recent years. The Bureau of Commercial Fisheries now places a greater emphasis on economic operation of the sealing industry and is attempting to phase out its community and welfare responsibilities. The people of St. Paul have willingly assumed some of the transferred proprietary functions, and their leaders have pushed vigorously for a greater degree of self-government. In this, they have had much support at the state and federal levels.

The desire to give St. Paul the right to manage its own affairs found favor with the U. S. Congress and is reflected in the Fur Seal Act of 1966. This legislation, sponsored by Senator E.L. Bartlett of Alaska and supported by the Interior Department, provides for transfer of land, property and facilities to St. Paul and its residents and for transitional grants to assist the community in providing municipal services. These benefits are predicated on a determination by the Secretary of the Interior that "a viable self-government community which is capable of providing adequate municipal services is established or will be established prior to the conveyance by the (townsite) trustee of any property to the natives of the Pribilof Islands."[108]

Of all aboriginal Alaska Native populations, perhaps the Aleuts, more than any other group, have been most greatly affected by extra-cultural and economic influences. Conquered, enslaved, subjected to disease and family disruption, wholsesale population transfer, and major governmental withdrawal of their former territories, they now number about 10 percent of their former number. And this percent, too, must be considered of mixed blood.

Some idea of their former village locations and current status can be gained from Figures III - 62, III - 63 and III - 64.

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[108] Don C. Foote, Victor Fischer, and George W. Rogers, *St. Paul Community Study*, College, Alaska, University of Alaska, Institute of Social, Economic and Government Research, 1968.

Environmental Livelihood Patterns

The way of life of the Aleut today bears but little resemblance to that of his aboriginal ancestors. Continued "foreign" occupation of the region since early Russian days together with the technological advances of the Twentieth Century have brought great change. But the change effected has been surficial--in boats and ships, in housing, in fishing gear, in clothing and in the greater dependence upon purchasable food stuffs--the basic reliance of the Aleut upon the marine environment for life support remains.

At the time of Russian contact the people of the Andrezanovsky[109] Islands were described as living in the following way:[110]

> ... In the low places they have earthen huts in which they always live. They never heat their dwellings, either in summer or winter.
>
> ... They wear parkas made of skins of sea-birds, arries and puffins, which birds are caught on the sea-coast by nooses made of whalebone; they also wear kamleikas (waterproof shirts) made of the guts of sea-lions and seals, but no other clothing.
>
> ... To seek food they go to sea in their small skin-boats, angle the halibut and cod, bring their catch into their huts and eat the fish raw; but when the weather becomes stormy and continues so for several days, it is not possible to set out to the sea and famine strikes them and their wives and children. In order to prevent starvation they go to the sea-coast, gather sea-weed and different shells, bring them home and eat them raw. They look particularly for stranded dead sea-mammals. When God rewards them, they eat the sea-mammals raw.
>
> ... They hunt sea-otters in May and June, in calm weather. In placid weather the natives start into the sea and reach the sleeping and awakened sea-otters, chase them in numerous small skin-boats, and kill them with darts, so that they can not escape from their hands. In the same manner they hunt seals.

mmunity

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[109] Today's proper geographic spelling is "Andreanof."
[110] Jochelson, *op. cit.*, p. 8.

FIGURE III - 62

HISTORIC NATIVE PLACES AND CURRENT STATUS

ALEUTIAN REGION

NATIVE GROUP	HISTORIC PLACES	EXISTING SETTLEMENT POPULATIONS			STATUS UNKNOWN	SEASONAL CAMP SITE	ABANDONED	ANTIQUITY SITE
		25 - 299	300 - 999	1000 +				
ALEUT.	A name of unknown origin but traced with some plausibility to the Chukchi word 'aliat,' meaning "island," which is supposed to have been bestowed upon the inhabitants of the Aleutian Islands through a misunderstanding. Also called: Takhayuna, Knaiakhotana, name according to Petroff (1884). U-nugun, own name, according to Dall (1886). The Aleut constituted the only widely divergent branch of the Eskimauan linguistic stock, the remainder of the tongues of that family being closely related. These people inhabited the Aleutian Islands, the Shumagin Islands, and the western part of the Alaska Peninsula. In 1786-1788 populations of Aleuts were introduced on the Pribilof Islands by the Russians. There were two main subdivisions distinguished by difference in dialect, the Atka and the Unalaska.							
Atka	Inhabiting Andreanof, Rat, and Near Islands; their settlements were:							
	Attu, on Holt Bay northwest shore Chichagof Harbor, Attu Island. Var. AttooChicuagof, Chichagov. Former Aleut village listed in the 1880 Census. This island, the westernmost of the Aleutian Islands, was sited by Chirikov in 1741 and visited by him for the second time on June 8, 1742; he named it Fedor's Island.						X	
	Korovinski, at Korovin Bay on Atka Island. On September 24, 1741, Bering discovered an island which he named St. Joan's Island and which it is supposed was Atka Island. According to Baker (1906) the residents moved to a site on Nazan Bay.						X	
	Nazon, on Atka Island. Var. Atka which is present place. Recorded in 1880 Census. On Nazan Bay, east coast of Atka Island. Population of Nazan in 1880 - 236.	X						
	Unalga, on Unalga Island, Andreanof group. Var. Oonalga, Oonalgenskoi. On northwest coast of the island, on Malga Bay. Former Eskimo village recorded in 1840. Listed in the 1880 Census - population 23.						X	
	The following ruined places on the single island of Agattu: Agonakagna, Atkulik, Atkigyin, Hachimuk, Hammulik, Hanilik, Hapkug, Higtiguk, Hilksuk, Ibin, Imik, Iptugik, Isituchi, Kakuguk, Kamuksusik, Kaslukug, Kigsitatok, Kikchik, Kikun, Kimituk, Kitak, Kuptagok, Magtok, Mukugnuk, Navisok, Siksatok, Sunik, Ugiatok, Ugtikun, Uutumuk, Ukashik. Former Aleut villages reported by Hodge (1907). All uninhabited and locations unknown.						X	X
Unalaska	Inhabited the Fox and Shumagin Islands and the Alaska Peninsula. Their settlements were:							
	Akutan, on Akutan Island, close to Unalaska Island. Reported in 1869 by Davidson, USC&GS. Located on the east coast of the island, on the north shore of Akutan Harbor. Post Office established in 1914.	X						
	Avatanak, on Avatanak Island, between Unalaska and Unimak Islands. Var. Aiaialgutak, Avatznak, Avatanakskoi, Awatanok. Aleut name transcribed by Russians into various spellings; apparently identical with "Aiaialgutak" of Capt. Drenitzin and Lt. Levashev, 1768 (1787 map). Name Avatanak was published by Venaiminor in 1840 and Captain Tebenkov, 1852, whereas Capt. Lutke (1836) and the Russian Hydrographic Dept. used the spelling "Avatznok".						X	
	Belkofski, near the end of the Alaska Peninsula, south coast, 27 miles east of village of Cold Bay. Var. Belkoffski, Belkoftski; from "Belka" meaning squirrel. Aleut village reported in 1847. Post Office established in 1888 and discontinued in 1951.	X						
	Biorka, on north coast of Dedanka (or Biorka) Island, 13 miles southeast of Unalaska village. Reported by Saur in 1790 and Lt. Sarichev in 1826. Present place.	less						
	Chernofski, near Chernofski Harbor, southwest coast of Unalaska Island. In 1826 name of this former Aleut village published as "Chernovskoy." (May be present place.) Site of Holmes sheep ranch.	less						
	Eider, at Eider Point, north coast of Unalaska Island. Var. Selo Pestrekovo. This village was reported in 1826.						X	
	Iliuliuk or **Unalaska**, on south shore of Unalaska Bay, Unalaska Island. Var. Gavayskoe. On a map dated 1742 and reported again in May 1826.	X						

NATIVE GROUP	HISTORIC PLACES	EXISTING SETTLEMENT POPULATIONS 25 - 299	300 - 999	1000 +	STATUS UNKNOWN	SEASONAL CAMP SITE	ABANDONED	ANTIQUITY SITE
Unalaska (Contd)	Kashiga, at head of Kashega Bay on southwest coast of Unalaska Island. Named for Kzshega Bay; first reported in 1826. Evacuated in W.W. II.						X	
	Korovinski, on north shore of Korovin Bay, Korovin Island (Atka Island). Var. Nikolskoye. Former Aleut village, now abandoned. Residents moved to a site on Nazan Bay.						X	
	Makushin, on north shore of Makushin Bay, Unalaska Island. Var. Cacooshino. Reported in 1826. The location of Makushin Village on Lt. Saricher's 1826 map is 4 miles northwest of the location applied on modern maps. Cannery site abandoned. Current White Alice Station.						X	
	Mashik, on Entrance Point at Port Moller, Alaska Peninsula. Var. Port Moller. Reported by Petroff in 1880.	less						
	Morzhovoi, present place on south shore of Trader's Cove on Bechevin Bay, Alaska Peninsula. Reported in 1847.						X	
	Nateekin, at head of Nateekin Bay, Unalaska Island. Var. Nztiaka. Reported in 1826; reported in 1906 as consisting of 2 huts and 15 people.						X	
	Nikolaief, on south coast of Alaska Peninsula at Duskin Lag[illegible], 11 miles north-northeast of Belkofski. Var. Nicoloffsky. Former Aleut village or camp presumably named by the Russians after Tsar Nikolas. Reported in 1880 Census.						X	
	Nikolski[a] , southwest coast of Umnak Island on Nikolski Bay. First reported in 1868. Present place of Harris sheepranch.	X						X
	Pavlof, on settlement point, east shore of Pavlof Bay near southwest end of Alaska Peninsula. Var. Pavlooskoi. Former Aleut village or camp shown in 1852.						X	
	Pogromni, near Pogromni volcano, on the north shore of Unimak Island. Former Aleut village or camp reported in 1828.						X	
	Popof, at Pirate Cove Island in Shumigan Islands. Reported in 1852.						X	
	Sannak, on east shore of Sannak Harbor on northwest coast of Sanak Island. Var. Sanak. Aleut village reported in the 1890 Census. Present place.	less						
	Unga, on Delarof Harbor, southeast coast of Unga Island in Shumagin Islands. Var. Delarof. Aleut village reported as Ougnagok in 1836.	less						
	Vossnessenski or Wosnesenski on Wosnesenski Island in the Shumagin group. No references available.						X	
Villages reported by later writers:								
	Agulok, on Unalaska Island. No references.						X	
	Akun, on Akun Island between Unalaska and Unimak. Location unknown. No reference.						X	
	Artelnof, on Akun Island, southwest coast. Former Aleut village, population 32 in 1834. Location unknown.						X	
	Beaver, on Unalaska Island. Eskimo village on northeast coast, near north entrance to Beaver Bay. Lt. Saricher called it Sel[o]Bobrova or "sea otter village" in 1826. Population in 1830 was 41. Location unknown. Var. Uguiug.						X	
	Chaliuknak, on Beaver Bay, Unalaska Island, north shore of Beaver Inlet. Aleut village reported in 1790, 1826, and 1906. Location unknown.						X	
	Ikolga, on Unalaska Island. Aleut camp reported in 1878 by Coxe. Location unknown.						X	
	Imagnee, on Summer Bay, Unalaska Island, east shore of Unalaska Bay. Reported in 1840 as Imagninskoe. Population in 1830 - 32. Var. Imagnok Sinagyna. Location unknown.						X	
	Itchadak, on one of the east Aleutian Islands. Reported by Coxe in 1787. Location unknown.						X	
	Kalekhta, om Kalekhta Bay, Unalaska Island. (Var. Selo Kulektha) Aleut village reported in 1826.						X	

NATIVE GROUP	HISTORIC PLACES	EXISTING SETTLEMENT POPULATIONS 25 - 299	300 - 999	1000 +	STATUS UNKNOWN	SEASONAL CAMP SITE	ABANDONED	ANTIQUITY SITE
	Kutchlok, on Unalaska Island. Location unknown. Reported by Coxe in 1787.						X	
	Riechesni, on Little Bay north coast of Akun Island in the Krenitzin group. Aleut village reported in 1830.						X	
	Saint George, on north coast of St. George Island, Pribilof group. Reported in 1880 Census. Present place.	X						
	Saint Paul, on south coast of St. Paul Island. First occupied about 1788 by Aleuts. Reported in 1880 Census.		X					
	Seredka, on Seredka Bay, southeast coast of Akun Island. Aleut village or camp reported in 1834 as Seredninskoye; population 16.						X	
	Sisaguk, on Unimak Island, north coast near Cape Lapin. Aleut village reported in 1833, population 91.						X	
	Takamitka, on Unalaska Island. Location unknown. Reported by Coxe in 1787.						X	
	Tigalda, on Tigalda Island, one of the east Aleutians. Aleut village reported in 1833 with population of 91. Location unknown.						X	
	Totchikala, on Unalaska Island. Location unknown. Var. Totzikala. Reported by Coxe in 1787.						X	
	Tulik[b] , on east coast of Umnak Island, near a volcano of the same name. Former Eskimo village reported in 1834 as Tulinskoe, population 26.						X	
	Ugamitzi, on Unalaska Island. No references, location unknown.						X	
	Uknodok, on Hog Island, Captains Bay, Unalaska. Former Aleut village published as Ukunadok by Coxe in 1787 and as Uknadak by Veniaminov in 1840. Village was site of dispute between Unalaskans and Unimaks in which latter were exterminated.						X	
	Veselofski, at Cape Cheerful, Unalaska. Old village site on north coast of Unalaska Island. (Var. Cheerful). Reported in 1826.						X	

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[a] Nikolski said to be at least 2,200 years old.

[b] Tulik - Near present site of World War II Fort Gleam. Used by Reeves Airline and Umnak Co. sheep ranch.

Sources: Foote, Don C.; Fischer, Victor and Rogers, George W. *St. Paul Community Study*. College, Alaska, University of Alaska, Institute of Social, Economic and Government Research, 1968.

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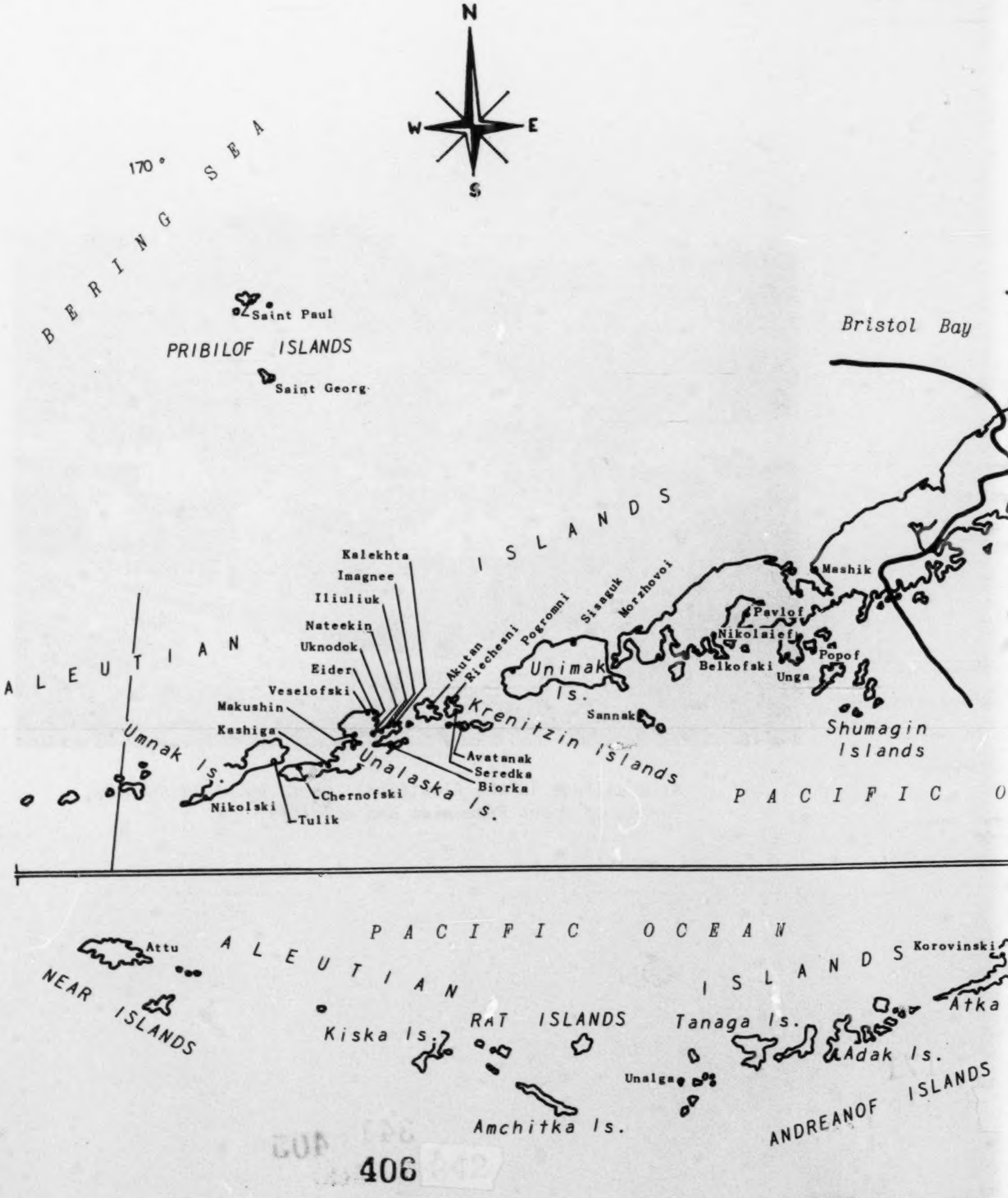
Compilation by David M. Hickok, Federal Field Committee for Development Planning in Alaska.

Atka village in the Aleutians. *Photo by David Spencer, Bureau of Sport Fisheries and Wildlife.*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Saint Georg
Bristol Bay
ALEUTIAN ISLANDS
Kalekhta
Imagnee
Iliuliuk
Nateekin
Uknodok
Eider
Veselofski
Makushin
Kashiga
Umnak Is.
Nikolski
Tulik
Chernofski
Unalaska Is.
Akutan
Riechesni
Pogromni
Sisaguk
Morzhovoi
Unimak Is.
Krenitzin Islands
Avatanak
Seredka
Biorka
Sannak
Mashik
Pavlof
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Belkofski
Popof
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PACIFIC OCEAN
Attu
NEAR ISLANDS
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Korovinski
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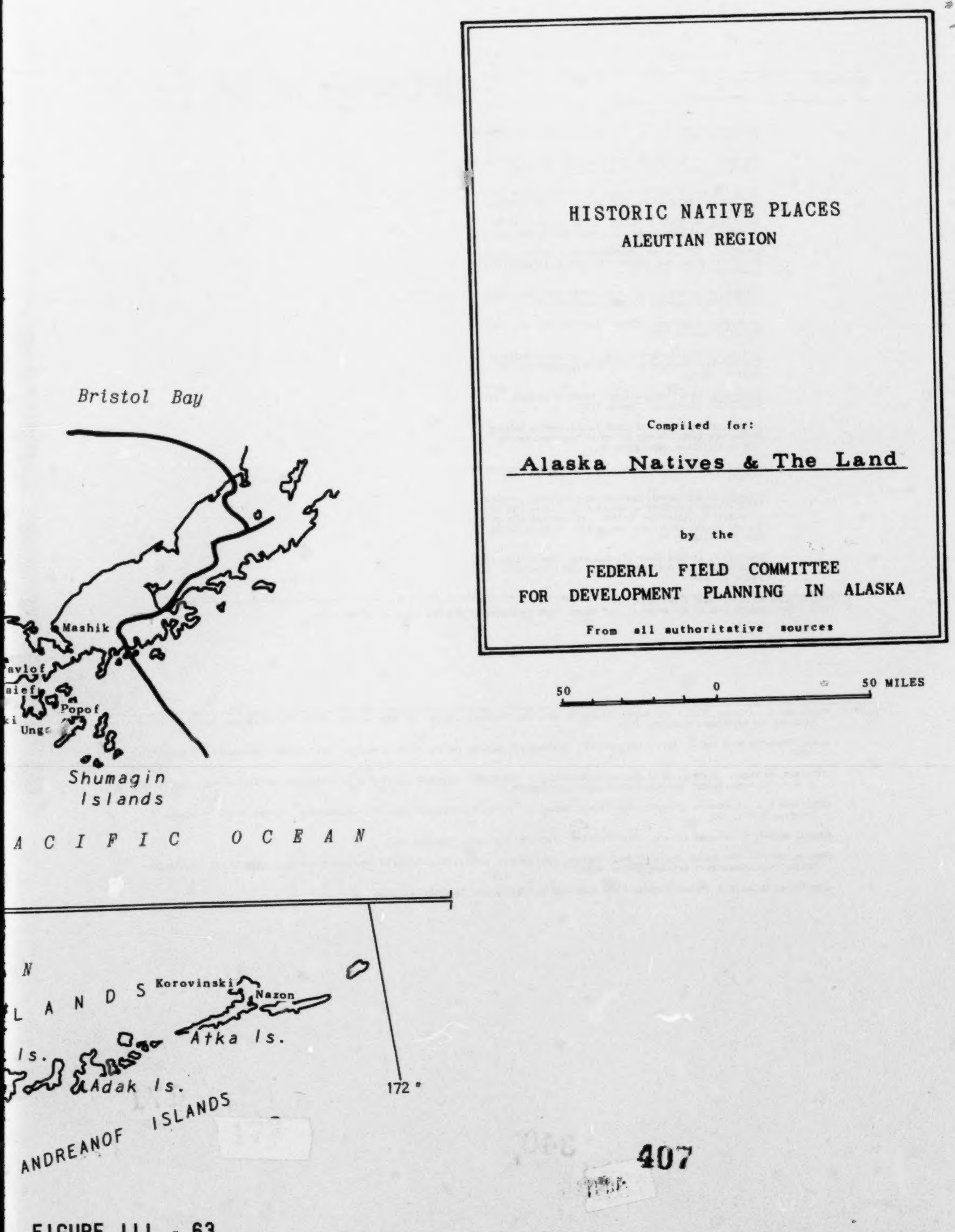
RAT ISLANDS
Tanaga Is.
Adak Is.
Unalga
Amchitka Is.
ANDREANOF ISLANDS

FIGURE III - 63



HISTORIC NATIVE PLACES
ALEUTIAN REGION

Compiled for:

Alaska Natives & The Land

by the

FEDERAL FIELD COMMITTEE
FOR DEVELOPMENT PLANNING IN ALASKA

From all authoritative sources

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FIGURE III - 63

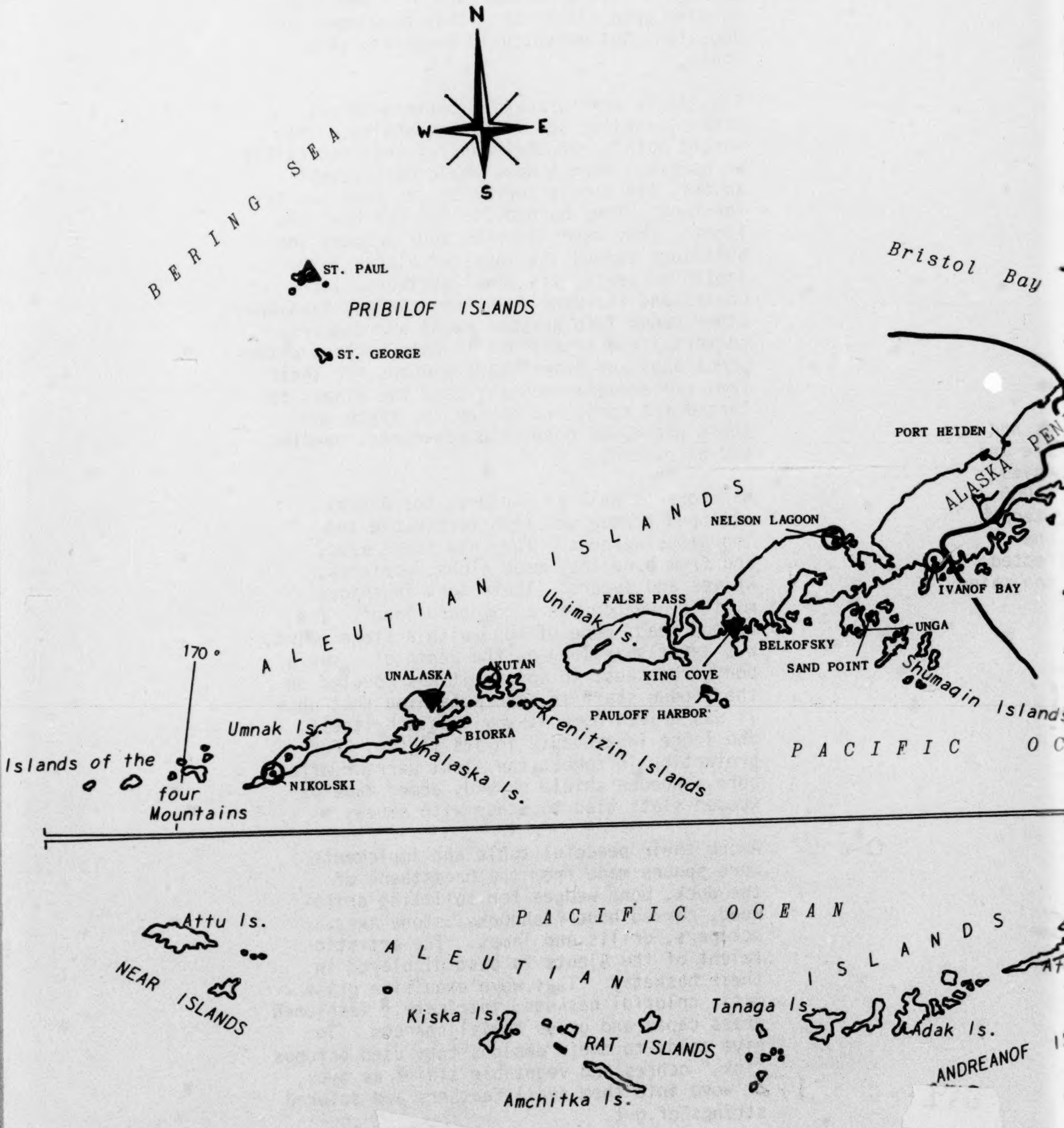
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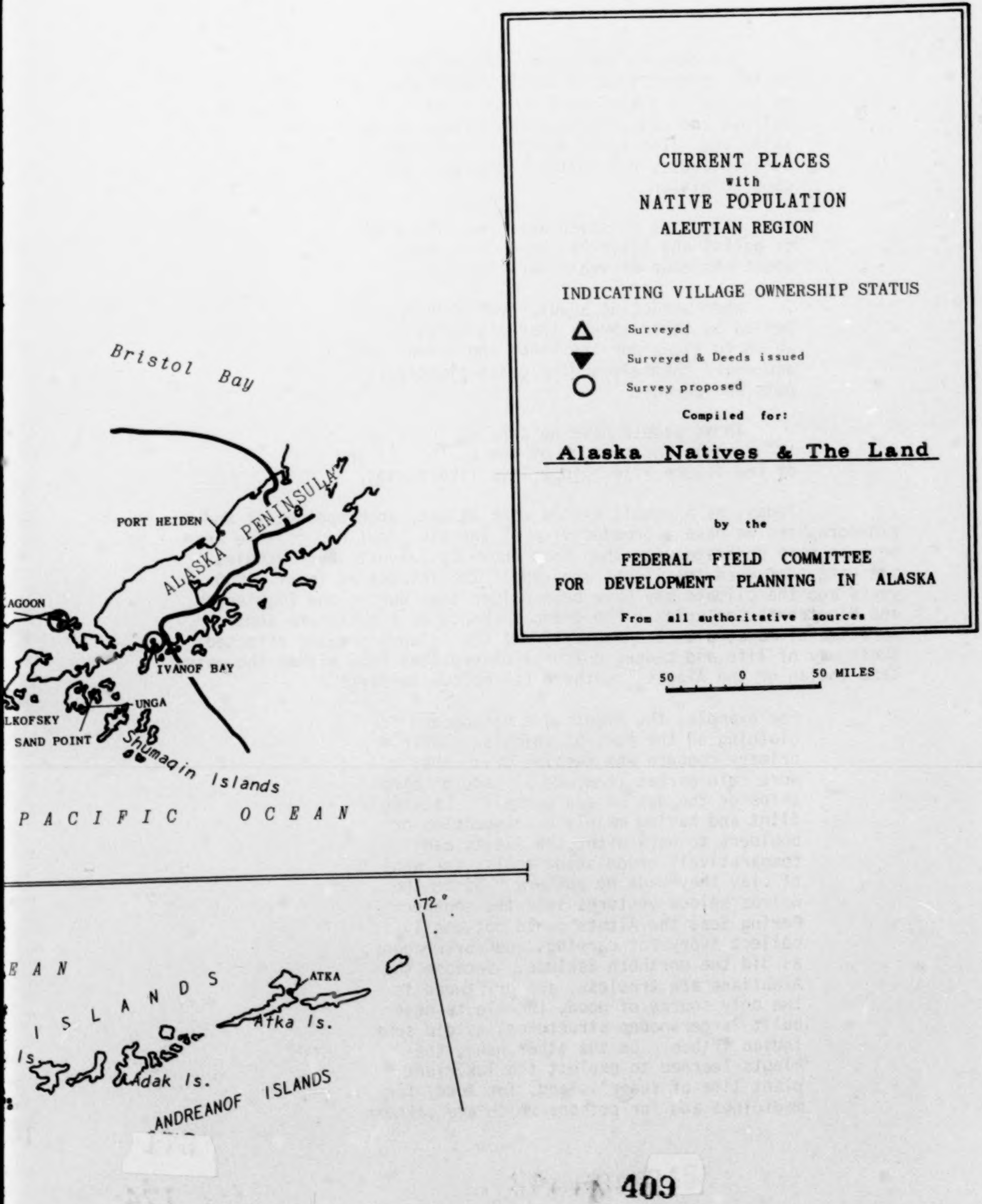
FIGURE III - 64



CURRENT PLACES
with
NATIVE POPULATION
ALEUTIAN REGION

INDICATING VILLAGE OWNERSHIP STATUS

- △ Surveyed
- ▼ Surveyed & Deeds issued
- ○ Survey proposed

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FOR DEVELOPMENT PLANNING IN ALASKA

From all authoritative sources

50 0 50 MILES
Bristol Bay
ALASKA PENINSULA
PORT HEIDEN
AGOON
IVANOF BAY
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LKOFSKY
SAND POINT
Shumagin Islands
PACIFIC OCEAN
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Adak Is.
ANDREANOF ISLANDS

FIGURE III - 64

> ... Not only in the summer season, but in the coldest time of winter, when they go to sea in their small boats to fish halibut and cod, they wear shirts of birds' skins and water-proof shirts of guts described above, but neither stockings nor caps or mittens.
>
> ... Women and children wear the same kind of parkas and kamleikas as do men, but sometimes made of sea-otters' skins.
>
> ... When wandering about, even when accompanied by their wives, they dig holes in which to sleep for the night and spread out and cover themselves with grass-plaited carpets and parkas.
>
> ... These people have no care whatever of their souls and no idea of the death hour and of the future life. They live like beasts.

Today, as a result of the work of many anthropologists and ethnographers we have a broader view of the old Aleut way of life and perhaps more understanding than that shown by Vasyutinsky. Studies indicate that when the Aleuts arrived in the islands at least 3,000 years ago the climate may have been colder than during the Eighteenth and Nineteenth Centuries. The gradual change to a temperate zone maritime climate, plus the isolation of the islands greatly effected their way of life and caused cultural divergences from either the mainland Indian or the Aleuts' northern Eskimo counterparts.

> For example, the Aleuts did not depend for clothing on the furs of animals. Their primary concern was keeping dry: they wore rain parkas (*kamleikas*) made of bird skins or the gut of sea mammals. Lacking flint and having mainly beach pebbles or boulders to work with, the Aleuts made comparatively crude stone tools; for want of clay they made no pottery. Since the walrus seldom ventures into the southern Bering Sea, the Aleuts could not easily collect ivory for carvings and for weapons, as did the northern Eskimos. Because the Aleutians are treeless, and driftwood is the only source of wood, the Aleuts never built large wooden structures, as did some Indian tribes. On the other hand, the Aleuts learned to exploit the luxuriant plant life of their islands for food, for medicines and for poisons which are unknown

to the northern Eskimos, and they attained great skill and artistry in basketwork and weaving. Living on the edge of a sea that remains open all winter, they developed not dog sleds but marvelously seaworthy skin boats.

The Aleuts were primarily hunters of sea mammals--seals, sea lions and whales. They wasted nothing of their quarry that was edible or usable. When a dead whale was brought ashore, the Aleuts carved up its meat and fat for food. They burned its fat for heat and light. They used its ribs and jawbones for building; turned its shoulder blades into tables or seats, its small vertebrae into chairs and its bone ends into plates; fashioned other bones into harpoon heads and daggers; converted the intestines to rain parkas, waterproof bags and translucent windows for their semi-subterranean houses; used the sinews for thread and cord; and carved the teeth and dense pieces of bone into ornaments, needles and arrowheads.

Warriors as well as hunters, the Aleuts equipped themselves with formidable and ingenious weapons. They had stone axes, and from bone they made clubs, poniards, knives and spears. Their most ingenious military weapon was a compound lance. The barbed head, made of bone with a stone point, was exactly as long as the depth of a man's body from chest to spine; it was mounted on the wooden staff in such a fashion that once it was driven home it would detach itself and lodge irremovably in its victim. For protection in combat the Aleut warrior often bore a wooden shield or body armor made of wooden slats tied together with sinews.

Among their peaceful tools and implements were spoons made from the breastbone of the duck, bone wedges for splitting driftwood, carved bone fishhooks, stone axes, scrapers, drills and lamps. The artistic talent of the Aleuts is best displayed in their basketry. They wove exquisite grass mats, colorful baskets, intricately fashioned grass capes and grass burial shrouds. To give color to their designs they used octopus "ink," ochres and vegetable stains as dyes, or wove into them small feathers and colored strings of gut.

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Perhaps the Aleuts' highest attainment was their skill and prowess as seamen and navigators. In this respect they surpassed all other Eskimos. It was not uncommon for Aleut hunters to rove the turbulent seas for hundreds of miles, paddling for days on end, resting seated erect in their skin boats when tired and lashing their small craft together to ride out storms. Russian explorers reported that Aleut hunters at sea "blazed a trail" with whitened sea-lion bladders, weighted with long ropes and stone sea anchors, which they set afloat at intervals to mark the route home through the fog.

The Aleuts put their faith in sunlight as the potent source of all life. They therefore habitually arose with the dawn to make the most of the daylight. Water, particularly sea water, was thought to be a great source of vitality. Before any special event or during some kind of crisis an Aleut took a ceremonial bath in the sea; to insure their stamina new-born babies were dipped in the surf no matter what the time of year.

As a warlike people, the Aleuts usually built their villages on a narrow isthmus, a neck of land or a promontory between two bays, apparently so that they could quickly transfer their skin boats from one body of water to the other in case of attack from the sea. Their dwellings were built underground, with only a narrow opening in the sod roof as an exit. Near every village was a lookout hill (*agi'sax'*). Here sentries watched for enemies, hunters scanned the sea for game, and women and children searched the horizon for their seafaring men, whose return they greeted with songs and dances.

Though ocean hunting was the livelihood of all the Aleuts and gave their scattered communities a basic cultural identity, their customs nonetheless differed from one island group to another. For instance, some Aleuts hunted whales and others did not. People on the western islands made their fish-line sinkers of round beach cobbles which they grooved around the middle, while elsewhere the Aleuts used flat cobbles. Ornaments worn by the Aleuts varied considerably, and

> there were many different styles of weapons and dress. Apparently isolation from one another, plus a demanding environment, stimulated the Aleuts' genius for developing new ideas. In time certain islands became centers of regional culture and of separate dialects. As we might expect, differences were most marked at opposite ends of the 1,000-mile chain of islands. This is because the chain, together with its linearly dispersed population, acted very much like a filter. New ideas originating in the eastern Aleutians or on the Alaskan mainland had to pass from island to island through this filter before reaching the westernmost Aleuts. On the way the innovations were often modified or blocked by the existence of local culture centers, dialects and military leagues that broke the flow into eddies.[111]

Today not nearly as many of the Aleutian Islands are occupied as were prior to the time of Russian contact and the people have been greatly reduced in numbers but those Aleuts that remain in the islands, those on Kodiak Island or the Alaska mainland coast possess the seaman skills of generations. It is this mariner skill and knowledge of the sea that provides them self-employed livelihood in a local commercial fishery or as a wage earner in the Kodiak, Bristol Bay or Aleutian fishery or with the Pribilof sealery.

The sea also still provides a primary food preference source for these people--fish, marine mammals, shellfish, even seal oil when available are dietary mainstays which supplement, in a most important way, their wage earner purchases at the store.

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[111] T. P. Bank, *op. cit.*

KODIAK REGION

Ethnic Settlement Patterns

Eskimos called the Kaniagmiut (now commonly Koniags) occupied the Kodiak region when it was discovered by Europeans. Their territory included Kodiak Island and the mainland from Iliamna Lake to Ugashik River, the south coast (of the Alaska Peninsula) to longitude 159°W.[112] Archeological research indicates that culturally similar people have inhabited this region continuously for at least 3,000 years and perhaps much longer. They possessed a primitive technology and social structure that was sufficient to allow population densities exceeding that attained by any other Eskimo group.[113] A culture ecologically well adapted to the environment and a reasonably compatible social existence must be credited to the Koniags prior to the Russian era.

The following quotation relating to the Koniag social organization is taken from Hrdlicka (1944).

> The Koniags had no central government according to Davydov (II, 113).
>
> Each village had its chief. Some of the chiefs, however, ruled over a number of settlements derived from one family group and bearing the name of the Bay or Lake in or about which they exist.
>
> The power of the chief of a settlement, however, was not great: often the islanders paid more regard to and followed some well-to-do individual, or a good hunter.[114]

Hrdlicka summarizes and quotes numerous historic published accounts of the initial Russian contacts and subsequent relationships with the Koniags. The story that emerges makes it clear that extreme and irreversible disruption of the Koniag's way of life set in almost immediately upon the arrival of the Russian fur seekers in the 1760's. The Natives were subjugated, not without bloodshed; families were broken up; men were sent to distant coasts in frail boats to hunt otter; and the structure of the aboriginal society and living regimen drastically altered.

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[112] Frederick W. Hodge, *The Handbook of American Indians North of Mexico*, Bureau of American Ethnology, Bulletin 30. Washington: Government Printing Office, 1910, p. 652.

[113] Wendell H. Oswalt, *Alaskan Eskimos*. San Francisco: Chandler Publishing Company, 1967, pp. 114-115.

[114] Ales Hrdlicka, *Anthropology of Kodiak Island*. Philadelphia: The Wister Institute of Anatomy and Biology, 1944.

The extent of the hardship is suggested by Bancraft (1886) who cites Lisiansky's visit to Kodiak in 1805:

> During his stay in Kadiak [Kodiak] Lisiansky visited several of the settlements on that island, concerning which he gives some interesting details. The entire population apart from the Russians he estimates at only four thousand, and remarks that according to the report of the oldest inhabitants it had decreased by one half since the arrival of the Russians. The wholesale mortality which had thus prevailed since Shelikof landed there in 1784 was mainly due to diseases introduced by the invaders, and to the severe toil and hardship to which the natives were exposed during the long hunting expeditions required of them by their task-masters. Other causes were the destruction of the sea-otter, on which they had been accustomed to rely for food during winter, and their neglect to lay in a stock of dried salmon for the season of scarcity.
> ....
>
> On visiting Igak on the 24th of March, 1805, Lisiansky reports that he found all the people in search of shell-fish along the beach, only the young children being left in the eleven filthy barabaras which formed the settlement.
> ....
>
> At Killuda Bay, a few versts south-west of Igak, Lisiansky landed at a settlement, 'in which,' he says, 'we found only women and children, the men belonging to it having been absent with Baronof since the preceding spring. Not having laid in provisions in sufficient quantity for the winter, these poor wretches were literally half starved...'[115]

When the Russians came, the Koniags were found living in smaller or larger villages located at favorable places all over the Kodiak archipelago and on the coast opposite. Hrdlicka quotes Tikhemeniw as follows:

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[115] Hubert H. Bancraft, *The History of Alaska.* Volume XXXIII of the author's *Works*, San Francisco, 1886.

> Out of 65 settlements in which up to that time lived the Aleuts [Koniags], or better said from which they lead a nomadic life over Kodiak and the islands that belong to it, there were formed seven communities - [one at St. Paul], one at the Three Saints establishment; one each at Orlov, Karluk and the Afognak stations, and on Wood Island; besides the one that constitutes the establishment on the island Ugamok.[116]

Major historic sites of habitation are listed in the succeeding figure entitled Historic Native Places and Current Status. There were numerous other prehistoric sites, many of which have never been catalogued.

Koniag population data as gathered from historic records has been summarized by de Laguna (1956) as follows:[117]

- 1790, Register of the Shelekof Company, about 5,000 for the Kodiak Island group.
- 1792, Delarof, about 6,510 for Kodiak Island and the Katmai area on the opposite mainland which was also inhabited by Koniag.
- 1796, Baranof, 6,206 for the same 2 areas.
- 1803, Davydof, about 7,000 for the Kodiak Island group.
- 1805, Lisiansky, about 4,000. He estimates 10,000 or more in pre-Russian days.
- 1825, Wrangell, 2,819.
- 1851, Holmberg, 1,500.
- 1880, Petroff, 1,943.
- 1890, Porter, 1,154 but we must subtract from this about 200 for the Eskimo at Port Graham and Seldovia.

More recent population figures for important Koniag settlements are given below in Figure III-65.

---

[116] Hrdlicka, *Anthropology ..., op. cit.*, p. 18.

[117] Frederica de Laguna, *Chugach Prehistory, The Archaeology of Prince William Sound, Alaska.* Seattle: University of Washington Press, 1956.

FIGURE III - 65

CENSUS DATA FOR VILLAGES IN KODIAK REGION

	1920	1929	1939	1950	1960	1967
Afognak	308	298	197	158	190	ND*
Aiaktalik	72	30	21	ND	ND	ND
Alitak (Akhiok)	ND	86	82	72	84	138
Kaguyak	52	52	31	ND	36	ND
Kanatak	ND	82	134	ND	ND	ND
Karluk	99	192	189	144	129	98
Kodiak	374	442	864	1,710	2,628	500
Larsen Bay	ND	ND	38	53	72	74
Old Harbor	54	84	109	121	ND	230
Ouzinkie	96	168	253	177	214	231
Port Lions						
Raspberry Straits	ND	ND	17	ND	ND	160
Uyak Bay	ND	ND	20	ND	ND	ND
Woody Island	104	116	54	111	78	ND

*ND denotes no data available.

Source: All data from U. S. Government Census Reports except 1967, which is from *Villages in Alaska and other places having a native population of 25 or more*, 1967, Federal Field Committee. 1967 figures represent natives only; figures for other years represent natives primarily, except Kodiak village.

Environmental Livelihood Patterns

The Koniags made use of nearly all animal and plant foods available to them. Hrdlicka (1944) quotes several early writers in describing Koniag food habits. He quotes Holmberg as follows:

> The Koniags consume anything that can be digested. In regard to the food the Konjage [Koniag] is even less particular than the Thlinkit. Their food consists mainly of fish, which in the summer during the catch are eaten cooked. For the winter they are dried, and eaten either raw or cooked... Among the greatest delicacies of the Koniags is however the flesh and blubber of the whale.[118]

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[118] Hrdlicka, *Anthropology...*, *op. cit.*, pp. 46-47.

FIGURE III - 66

HISTORIC NATIVE PLACES AND CURRENT STATUS

KODIAK REGION

NATIVE GROUP	HISTORIC PLACES	EXISTING SETTLEMENT POPULATIONS			STATUS UNKNOWN	SEASONAL CAMP SITE	ABANDONED	ANTIQUITY SITE
		25 - 299	300 - 999	1000 +				
Kaniagmiut	Their territory included Kodiak Island and the mainland coast to longitude 159°. Their settlements were:							
	Afognak, comprising three settlements on Afognak Island. First reported in the early 19th century. After tidal wave resulting from 1964 Earthquake destroyed most of Afognak, the people were relocated on Kodiak Island at Port Lions.					X		
	Aiatalik (or Ayakhtalik), on northwest coast of Aiatalik Island (Goose Island). Reported in 1880 Census. Reportedly abandoned.						X	
	Akhiok, on Akhiok Bay west of Alitak Bay at south end of Kodiak Island. Var. Ahkiok, Alitak, Oohaiak. Reported in 1814 and 1880 = present place.	X						
	Aleksashkina, at Icehouse Point on west coast of Wood Island, two miles east of Kodiak in St. Paul Harbor (or Seleniye Chiniak). Reported in 1852. Currently island used for government radio station.						X	
	Alexandrovsk, on Kenai Peninsula at south entrance to Port Graham, 10 miles southwest of Seldovia. First reported in 1826. Present-day English Bay.	X						
	Ashivak, 13 miles northwest of Cape Douglas on Kamishak Bay, Aleutian Range. Population in 1880 - 46.						X	
	Chiniak, at the east end of Kodiak Island. Former Eskimo village reported in 1880 census. Present location of U.S.N. Seabees base.						X	
	Fugitive, on east shore of Port Hobron, north coast of Sitkalidak Island, southeast of Kodiak Island. Var. Port Hobron. Reported 1805. Abandoned except for people handling grazing lease.						X	
	Igak, on Afognak Island, east of Afognak, Kodiak Island. Var. Igagmjut, Kaljukischwigmiut. Former camp or village that seems to have been moved.					X		
	Kaguyak, at head of Kaguyak Bay on southeast coast of Kodiak Island. Reported in 1880 as Kaguiak. Destroyed by 1964 tidal wave.						X	
	Kaluiak, on south shore of Chignik Bay, east of Anchorage Bay and northeast of Chignik, Aleutian Range. Reported in 1880 Census.						X	
	Kanatak, on Shelikof Strait at head of Portage Bay on south coast of the Alaska Peninsula. Eskimo village listed in 1890 Census with a population of 26.							
	Karluk, on east coast of Kodiak Island. Reported in 1805. Var. Kunakakhvak. Antiquity site at Old Karluk.	X						X
	Katmai, site of a village near Katmai Bay on the south coast of the Alaska Peninsula. A once important Eskimo village first reported in 1827. Population in 1880 Census - 218. Following the 1912 eruption of Mount Katmai the people were resettled at Perryville, 19 miles east of Stepovak Bay.						X	
	Kattak, 0.6 mile north of Afognak on the south coast of Afognak Island. Var. Aleut Village, Kattag. Reported in 1849.					X		
	Kiliuda, at head of Boulder Bay, on southeast coast of Kodiak Island. Var. Kiluden. Reported in 1805. Population in 1880 - 36.						X	
	Kodiak, on northeast coast of Kodiak Island. Founded in 1792 by a Russian trading company. Present place.			X				
	Kuiukuk, on the southeast coast of the Alaska Peninsula. Var. Kuyukak, Wrangell Bay. Former camp or settlement with an 1880 population of 18; population 62 in 1890.						X	
	Kukak, on Kukak Point, on south coast of the Alaska Peninsula, 31 miles northeast of Mount Katmai, four miles southwest of present site of Kukak. Former village reported in 1831 as Selenie Kukak. Present site of Kukak reported a population of 37 in 1880. Both places abandoned.						X	
	Liesnoi (Var. Woody Island), in Chiniak Bay, 2.6 miles east of Kodiak. In use as early as 1792 by the Russians.						X	

NATIVE GROUP	HISTORIC PLACES	EXISTING SETTLEMENT POPULATIONS			STATUS UNKNOWN	SEASONAL CAMP SITE	ABANDONED	ANTIQUITY SITE
		25 - 299	300 - 999	1000 +				
Kaniagmiut (Contd)	Mitrofania, on Mitrofania Island, first reported in 1850. Present site of Mitrofania is on the coast of the Alaska Peninsula, 24 miles southwest of Chignik, both abandoned.						X	
	Nauklak, on Alaska Peninsula, 15 miles east of Naknek Lake. Var. Naouchlagamut, Nauklagamut. Former village reported in 1898. Location unknown.						X	
	Nunamiut, on west shore of Three Saints Bay, on southeast coast of Kodiak Island. Native site of first permanent Russian settlement in Alaska.						X	
	Nunikiak (Var. Nunalik, Litnik) on west coast of Afognak Island at Cape Nuniliak. Former Eskimo summer camp reported in 1839.						X	
	Orlova (Var. Eagle Harbor), on Eagle Harbor on south shore of Ugak Bay, east coast of Kodiak Island. Former village reported in 1890 with a population of between 60 and 70 Eskimo natives.						X	
	Ostrovki, on west coast of Kenai Peninsula on Kachemak Bay. This is the Russian name for a former Eskimo village reported in the 1880 census with a population of 74. Location unknown.						X	
	Sutkum (or Sutkhoon), on Sutwik Island off the southeast coast of the Alaska Peninsula. Reported in 1880 census.						X	
	Uganik, on west shore of Northeast Arm Uganik Bay, on north coast of Kodiak Island. Var. Oohanick, Ooganak, Uganuk. Reported in 1805. Population in 1880 - 73.					X		
	Uhaskek, between Gull and Dangerous Capes on the southeast coast of Kodiak Island. Var. Oohaskeck. Former village or camp recorded in 1804.						X	
	Ukshivikak (or Ukshivik), on Barling Bay, southeast coast of Kodiak Island. Var. Ukshivkag-miut. Former village or camp reported in 1849.						X	
	Uyak, on west shore of Uyak Bay south of Harvester Island on the northwest coast of Kodiak Island. Var. Bobrowskoje, Ooiatsk, Ugujuk. Eskimo village reported in 1805. Population in 1880 - 76. Present place of about 20 people with other seasonal uses as well.	less				X		
	Larsen Bay, near mouth of Larsen Bay on west shore of Uyak Bay on northwest coast of Kodiak Island. Reported in 1890 as a native village with less than 20 people. Present place.	X						
	Uzinki, present-day Ouzinki, on west coast of Spruce Island, northeast of Kodiak Island. Reported in 1849. Present place.	X						
	Yelovoi, on southwest coast of Spruce Island in Narrow Strait, 7.5 miles north of Kodiak. This is the Russian name for a former Eskimo village or camp. Population in 1880 - 78.						X	

Sources: Hodge, Frederick Webb (ed.). Part I and Part II: *Handbook of American Indians North of Mexico*. Washington: Government Printing O Office, 1907.

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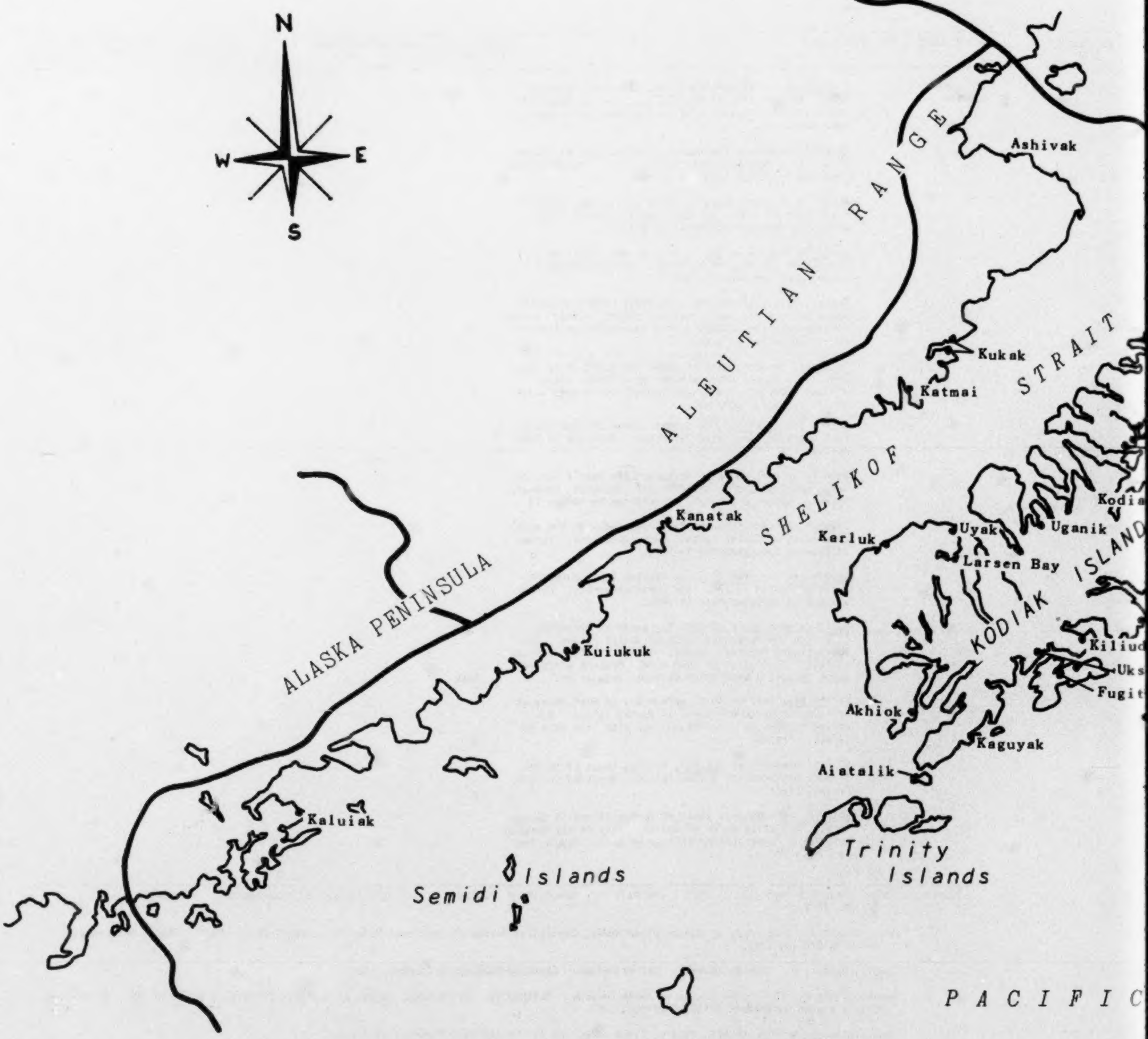
Compilation by David M. Hickok, Federal Field Committee for Development Planning in Alaska.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Karluk
Larsen Bay
KODIAK ISLAND
ALASKA PENINSULA
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Kiliud
Uks
Fugit
Akhiok
Kaguyak
Aiatalik
Trinity Islands
Kaluiak
Semidi Islands
PACIFIC

FIGURE III -

HISTORIC NATIVE PLACES
KODIAK REGION

Compiled for:

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by the

FEDERAL FIELD COMMITTEE
FOR DEVELOPMENT PLANNING IN ALASKA

From all authoritative sources

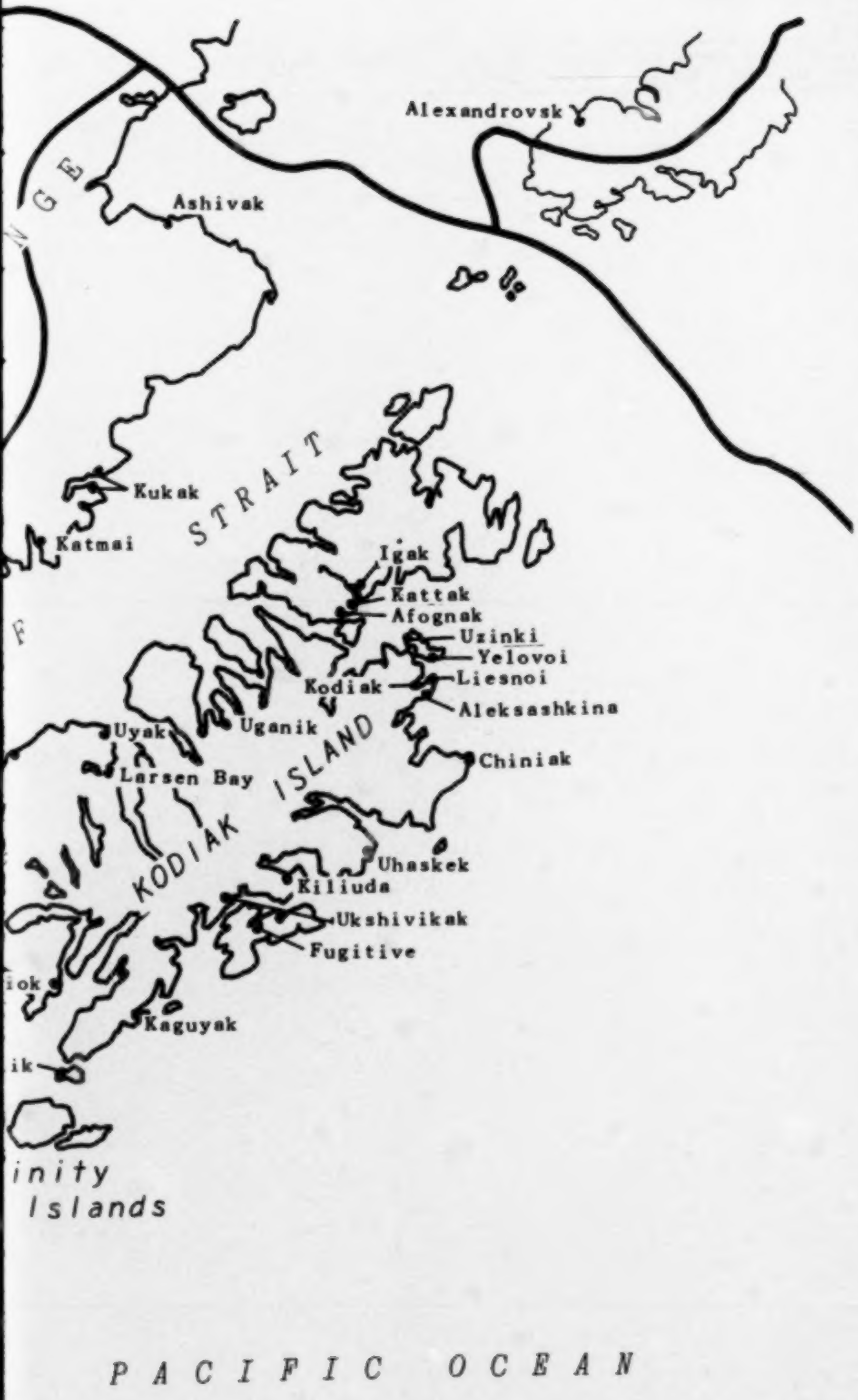
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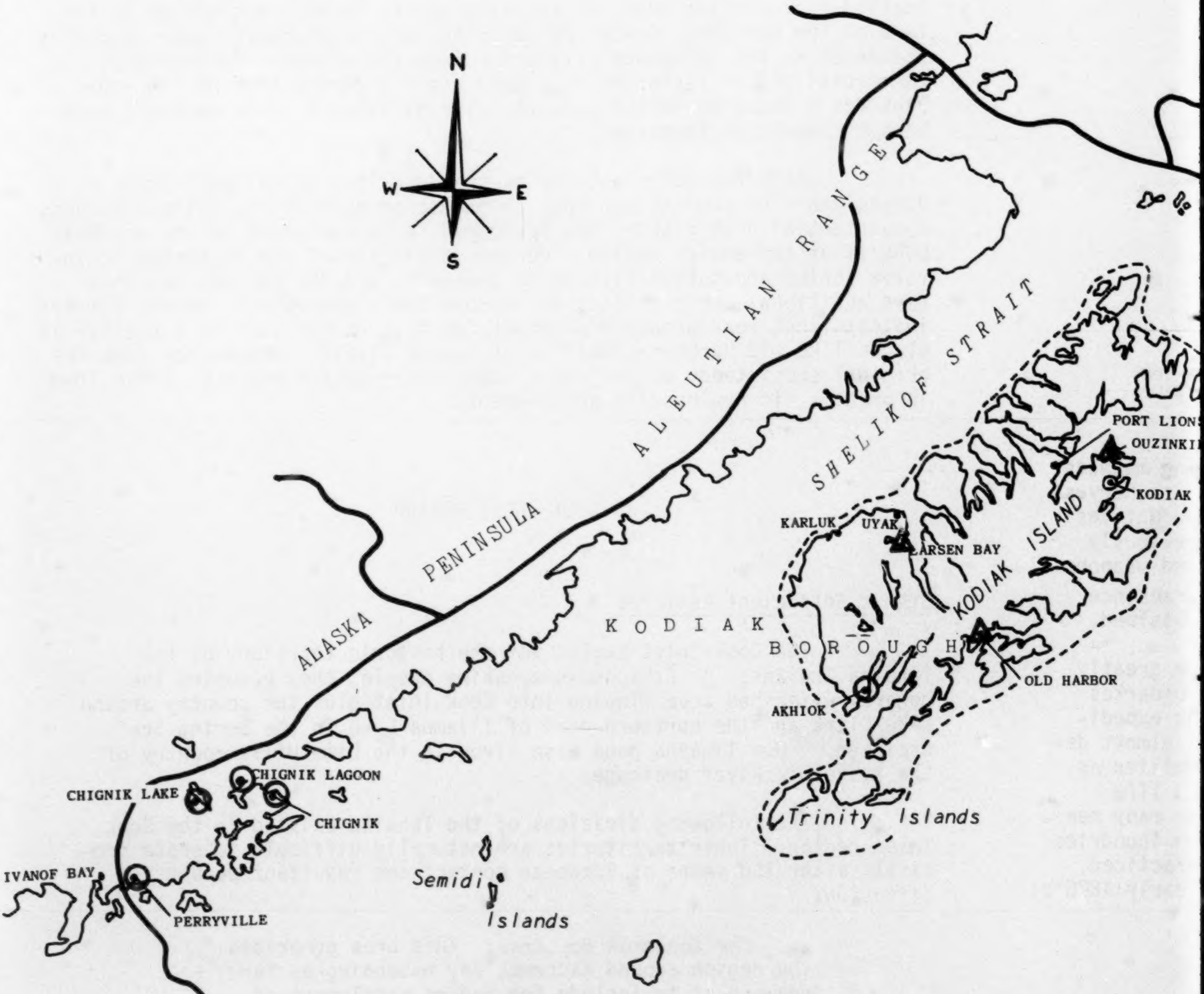
FIGURE III - 67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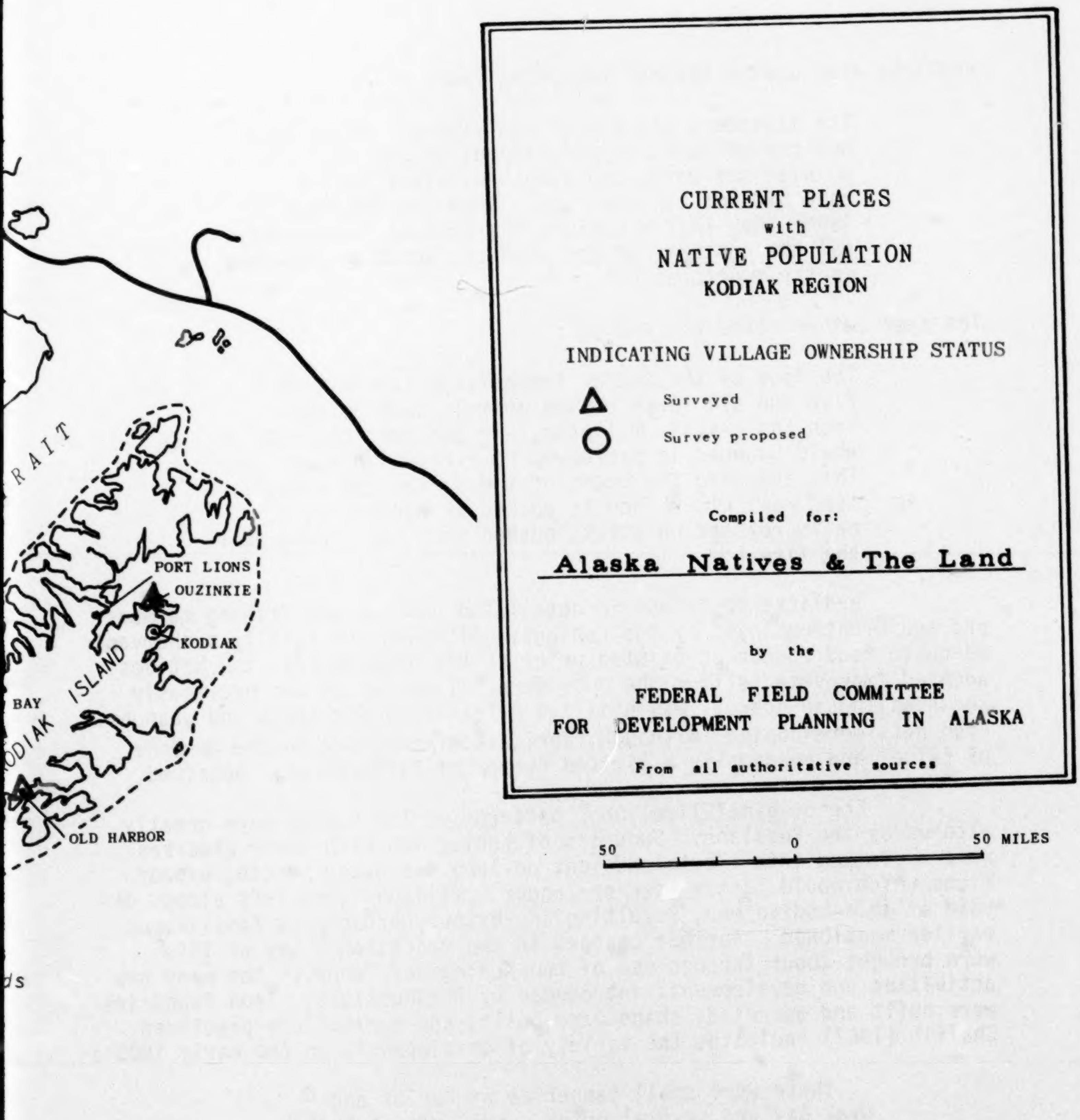
KARLUK
UYAK
LARSEN BAY
OLD HARBOR
AKHIOK
Trinity Islands
CHIGNIK LAGOON
CHIGNIK LAKE
CHIGNIK
IVANOF BAY
PERRYVILLE
Semidi Islands
PACIFIC

FIGURE III - 68



CURRENT PLACES
with
NATIVE POPULATION
KODIAK REGION

INDICATING VILLAGE OWNERSHIP STATUS

△ Surveyed
○ Survey proposed

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FEDERAL FIELD COMMITTEE
FOR DEVELOPMENT PLANNING IN ALASKA

From all authoritative sources

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GURE III 68

Hrdlicka also quotes Davydov regarding food:

> The islanders eat almost everything. There is not one mollusk, or cephalopod; or any repulsive sea worm, and almost no plant, which they did not use for food. When [on the mainland] they kill a caribou the natives immediately eat the contents of the stomach, which is regarded as the sweetmeat.[119]

The same author cites Lisiansky:

> The food of the Kodiak inhabitants consists of fish and all sorts of sea animals such as sea-lion, hair-seal, mollusks, and sea turnips, but whale blubber is preferred to everything else. This and also the heads of the salmon are always used raw; other food is cooked in earthen pots, or is roasted on sticks pushed into the ground near the fire.[120]

Hrdlicka describes in detail the hunting and fishing methods and equipment employed by the Koniags. Although the ability to harvest adequate food resources existed prior to the Russian era, the Natives adopted improvements from the outsiders. Iron, which was previously known, although scarce, was utilized effectively for tools and weapons. Fish nets were copied, although fabricated from sinew in the absence of twine, and eventually a limited number of firearms was obtained.

The original livelihood patterns of the Koniag were greatly altered by the Russians. Hundreds of Koniag men with their bidarkas were organized into fleets and sent on long sea otter hunting expeditions which would last a year or longer. Villages were left almost devoid of able-bodied men, resulting in serious hardship to families as earlier mentioned. Further changes in the traditional way of life were brought about through use of the Koniags as labor in the many new activities and developments introduced by the Russians. Iron foundries were built and operated, ships were built, and agriculture practiced. Chaffin (1967) indicates the variety of developments in the early 1800's:

> ...there were small tanneries at Karluk and Uyak Bay and several brick yards; one on Kodiak and one on Long Island. Cattle and sheep raising and some gardening were carried on in some of the settlements. As stated in the section on Karluk, there were salting and packing establishments located in that section from earliest Russian times. Karluk River, small though it was, was once known as the greatest salmon stream in the world. In the 1890's the largest salmon cannery in the world was located there.[121]

After the purchase of Alaska by the United States, sea otter conservation measures imposed by the Russians were abandoned. Uncontrolled exploitation reduced sea otter stocks to near extinction by the turn of the century. Gardening and other useful endeavors were gradually abandoned as the influence of the Russians diminished. Fortunately, commercial salmon fisheries developed rapidly during this period and provided a means of Native support. The Natives, in this century, have become commercial fishermen.

Although deficient living standards may exist, particularly during years of poor salmon runs, economic advancement is being achieved. A substantial crab fishery has developed in recent years to the economic benefit of the entire region. Further expansion of the fisheries to involve shrimp and bottom fish is in prospect, and the Natives may thus have additional opportunities to improve their economies. Recent surveys indicate that year around employment for Natives may soon be a reality in places like Old Harbor as well as at Kodiak itself. Transition from the original subsistence economy to a sound extra-active economy, while long in process, is now nearing achievement.

COOK INLET REGION

Ethnic Settlement Patterns

The Cook Inlet region was the historic territory of the Tanaina Indians. An Athapascan-speaking people, they occupied the general watershed area flowing into Cook Inlet plus the country around Lake Clark and the northern part of Iliamna Lake in the Bering Sea drainage.[122] One Tanaina band also lived in the Lime Hills country of the Kuskokwim River drainage.

The following divisions of the Tanaina existed in the Cook Inlet region. Their territories are naturally difficult to state precisely after 150 years of European contact and resultant population diffusion:

> ... *The Kachemak Bay Area.* This area comprises the region around Kachemak Bay extending as far seaward as to include the modern settlement of Seldovia in the bay of the same name. This is

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[119] *Ibid.*

[120] *Ibid.*

[121] Yule Chaffin, *Koniag to King Crab.* Chaffin Incorporated, Deseret News Press, 1967.

[22] Cornelius Osgood, *The Ethnography of the Tanaina* (New Haven: Yale University Press, 1937).

the only present existing village in the area and marks the Tanaina-Eskimo boundary in this direction. Formerly the natives occupied other sites along both sides of Kachemak Bay.

... *The Kenai Area.* This comprises the greater part of the west coast of Kenai Peninsula north of the Kachemak Bay area and includes the country of Tustumena, Skilak and Kenai Lakes as far north as Turnagain Arm. The principal native settlement is Kenai. Other known villages, from south to north, are: Kasnatchin (Anchor Point), Ninilchik, Kasilof, Skittok (near Kenai), Chinila (near Kenai), Skilak (south side of Skilak Lake), Titukilsk (near Nikishka), Nikishka (near East Foreland), and Kultuk (near Nikishka).

... *The Upper Inlet Area.* The region north of the Kenai area with its center around Knik Arm but including the drainage of the rivers emptying into it. Anchorage, the largest European town within Tanaina limits, is located on Knik Arm, but the principal modern Indian village is farther up the coast at Eklutna. Other known settlements in this area are Zdluiat (south of Nitak), Nitak (near Eklutna), Knakatuk (opposite Nitak on the west side of Knik Arm), and Knik (near the mouth of Knik River).

... *The Susitna Area.* This subdivision lies west of the Upper Inlet and comprises the valleys of the Susitna River and its affluents. Of the few remaining Indian villages, Susitna ranks as the most important.

... *The Tyonek Area.* Across the inlet from the Kenai area, it extends from the Susitna Area seaward to the Eskimo boundary at about Kamishak Bay. At the present the only settlement is the fairly large Indian village of Tyonek (Pl. 2,C). Possibly the region about Kustatan, a village below Tyonek, formerly represented a distinct subdivision but the evidence points to the direct connection of these two.

... *The Iliamna Area.* The valley of the Iliamna River and the region about the northern part of the lake of the same name. The chief settlement is Iliamna Village (near the mouth of the Iliamna River).

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[123] *Ibid.*, pp.
[124] Lisiansky,
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> ... *The Clark Lake Area*. The country around Clark Lake northwest of the Iliamna region including the upper Mulchatna River drainage. This section was not visited and consequently its ethnographical variations were not studied. There are several Indian villages, the principal of which is Nikhkak.[123]

It is estimated that the Tanaina population in the Cook Inlet region about 1805--some twenty years after Russian settlement in the region began--was about 3,000 persons in fourteen settlements.[124]

Today the descendants of this Tanaina Indian population probably number less than one third this amount although the total Native population for the Cook Inlet region is today about 6,000 people.[125]

A number of historic,economic and social forces have interacted to effect this change.

Briefly the pattern of change has been as follows:

... Initial English fur trade contact in 1786 to 1790's;

... Russian settlement at Kasilof in 1786 followed by erection of St. Nicholas redoubt at Kenai in 1791 and violent resistence to Russian expansion efforts to colonize, convert people to Christianity, suppress polygamy, etc., resulting in a hold-back upon Russian exploitation until about 1838;

... The 1838 Smallpox epidemic which greatly decimated the Indian population and broke down group morale and action enabling Russian exploitation to expand and start the decline of Native culture in the region;

... The purchase of Alaska in 1867 which, although it did not greatly accelerate the cultural breakdown of the Tanaina, did start the beginning of another set of changes influenced by United States military occupation until 1878. Trade became dominated by the Alaska Commercial Company who, possessing exclusive rights to the Pribilof fur sealery, were able to develop other fur trade and transportation monopolies extending, for example, regular ship service to Cook Inlet;

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[123] *Ibid.*, pp. 13-15.

[124] Lisiansky, *A Voyage Round the World,* quoted by Cornelius Osgood in *The Ethnography of the Tanaina* (New Haven: Yale University Press, 1937).

[125] *Villages in Alaska and Other Places Having a Native Population of 25 or More,* a report prepared by the Federal Field Committee for Development Planning in Alaska, Anchorage, Alaska, 1967.

Note: Osgood estimated Tanaina population in 1932 as 650 people.

- ... The general by-passing of the Cook Inlet region by the major economic and political forces of the period 1880 to 1912--gold, fisheries, reindeer introduction, missionary effort with the Eskimos, etc.;
- ... The construction of the Alaska Railroad between 1914 and 1932, and related developments such as the establishment of Anchorage in 1914, opening of the agriculture of Matanuska Valley and access to the Matanuska coal fields;
- ... The 1934 federally-sponsored agricultural colonization of the Matanuska Valley;
- ... World War II and the advent of military construction in the Anchorage area, i.e. the construction of Ft. Richardson in 1940 and the Glenn Highway construction between Anchorage and Tok to link up with the Alaska Highway.

Environmental Livelihood Patterns

The livelihood pattern of the Cook Inlet region is now completely dominated by the effects of the basin's cash economy. And, while it is true that indigenous Native people of the region supplement their income with the subsistence harvest of fish, game, and other products of the land and water, it is also true that the whites of the area and the Natives who have moved here from all over Alaska do likewise.

The wildlife resource available for harvest is described in Chapter IV. The fishery of the region is dominated by commercial and sports interests rather than by Native subsistence needs. Therefore, for the purposes of this report there is little need to describe in detail the past dependence of the Tanaina upon the resources of the land.

This can be very briefly summarized by quoting Osgood.[126]

> Most of the Northern Athapaskan people depend for food primarily on fish and secondarily on land mammals. The supply of either is frequently none too certain. The Tanaina alone have sea mammals, and not only are they unique in this respect, but they have fish and land animals in abundance as well. Historic records show how rich the inlet has been in salmon, while even today a traveler can see that the sea mammals are plentiful. As for game animals, hunters, the world over, eulogize the Kenai Peninsula.

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Within the Tanaina area the distribution of these food potentialities is not equal, however, which results in groups of villages differing in this and dependent aspects of culture. The outstanding factor affecting the range of the food supply is at least correlated with salt water. In the Kachemak Bay area there is a regular salt water fauna, but in the narrower upper regions, fed by many glacial streams, the inlet is apparently not suitable for many forms of sea life. The inland villages have fresh water and a considerably colder climate which limits the food supply both in regard to the number of species and in the time of seasonal residence. One thus finds a very rich food area in the Lower Inlet, and areas gradually poorer as one moves up the inlet and inland until at last there is the familiar Athapaskan situation of a people who intermittently starve. The division of these food areas may be expressed for convenience as follows:

1. Kachemak Bay Area--mild climate--salt water.

2. Kenai-Tyonek Areas--climate less mild than the above--salt water mixed with fresh.

3. Upper Inlet Area--climate cold--dirty fresh and salt water mixed.

4. Iliamna and Susitna Areas--climate cold--fresh water only.

A consideration of the following chart showing the sea fauna caught locally and eaten by the Tanaina quickly indicates the inequality of food supply in different areas. The superior position of the Kachemak Bay district may be seen at a glance by contrasting it with the inland areas of Susitna and Iliamna.

Land animals and vegetable foods are more evenly distributed, however, and play an important part in solving the food problem.

To turn from the general economic problem of distribution, we can say without much doubt that fish, and especially salmon, is the most important article of diet for the Tanaina as a whole. Kenai informants insist on the point especially, bringing as corroboration stories of hunger periods in the early spring when there are no fish. In the Kachemak Bay area, my principal informant, quite as might be expected, instantly assigned the place of first importance to sea mammals in general and the hair seal in particular (at the same time rather regretfully admitting that fur seal are more to his taste). Also he states that the Kachemak Bay people always have plenty to eat. In the Upper Inlet it is not certain whether caribou or salmon provide the staple of existence, but admittedly there are hunger periods in either case. An Iliamna informant states that to the best of his knowledge, red salmon are the most important food in summer and rabbits and ptarmigan in the winter. From historic sources we have Lisiansky's comment that the people of the Bay of Kenai lived better than the Aleutians (Eskimo) because they had, besides fish, the animals, especially wild sheep, which they hunted. Sheldon notes at a much later period that, despite the proximity of game, they are primarily salmon fishers. Vrangel observed that the Tanaina from the districts of Kachemak Bay and Kenai depended far less on caribou than the Upper Inlet and Susitna people.

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[126] Osgood, *Ethnography of...*, *op. cit.*, pp. 26-28.

	Kachemak Bay	Kenai--Tyonek		Upper Inlet	Susitna--Iliamna	
Humpback salmon	X	X	R	X	X	0
Dog salmon	X	X	R	X	X	0
Silver salmon	X	X	X	X	X	0
Red salmon	X	X	X	X	X	X
King salmon	0	X	X	X	X	0
Herring	X	X	X	X	0	0
Halibut	X	0	R	0	0	0
Catfish	X	X	R	0	0	0
Candlefish	X	X	X	X	X	X
Bullheads	X	0	R	0	0	0
Tomcod	X	X	X	X	0	0
Octopus	X	0	0	0	0	0
Clams	X	X	0	0	0	0
Mussels	X	0	0	0	0	0
Crabs	X	X	X	0	0	0
Hair seal	X	X	X	X	0	0
Fur seal	X	0	0	0	0	0
Sea otter	X	0	R	0	0	0
Sea lion	X	0	0	0	0	0
Porpoise	X	0	0	0	0	0
Beluga	X	X	X	X	0	0

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127Osgood

X Food caught locally and eaten.
R Food rarely caught locally.
0 Food not caught locally.

More important than this story of the past is recognition of the fact that today very modern economic and social forces dominate the Cook Inlet region affecting Native and white similarly, if not always equally, to an extent not developed anywhere else in Alaska.

The effect of these forces upon Native ethnic identity and settlement patterns was first a gradual cultural decline following the epidemic of 1838 which about halved their numbers. Second, a long gradual period of trade and contact--with Russians and Aleuts, with the whalers and traders of the 1880's and a few American trappers and then some contact with fortune seekers bound for the Yukon Valley gold fields--all resulting in continual cultural erosion but no major change. The third effect is of recent times. It began with the construction of the Alaska Railroad and built up in impact, through the colonization of the Matanuska Valley to the period of rapid growth about Anchorage in World War II and during the post-war era.

During this latter period, most Tanaina villages were either abandoned or taken under white cultural and policical dominance so that today only two identifiable Tanaina villages--Tyonek and Eklutna--exist in a region where a score were present about the turn of the century. Figures III - 70 and III - 71 illustrate this transition. The culture of the real Tanaina is dead or dying.[127]

In its place, however, throughout the Cook Inlet region, one sees today representation of all of Alaska's Native ethnic groups. They have come in response to the advantages of the same civilization and culture which has virtually destroyed the Tanaina people and their total mixed Native population is twice that of the Tanaina 150 years ago.

One cannot leave a description of the Tanaina people, however, without mention of the economic extremes present today between two groups of these people. These extremes--both caused directly by government--are the affluence of the Tyonek people and the landless, low-income status of the so-called Kenaitzi (a Tanaina grouping of peoples from several villages on the Kenai Peninsula). Petroleum resources have been discovered on the Tyonek Native Reserve and on the Kenai peninsula. By governmental decision, revenues from the development of Tyonek resources have accrued to the people with resultant enhancement of community and individual life. The former lands of the Kenaitzi, on the other hand, are now part of the Kenai National Moose Range or are state or private lands in the economically booming petroleum industrial area around Kenai. The Kenaitzi as a group do not share in this growing economy as do their more fortunate Tyonek brothers.

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[127] Osgood, *Ethnography of...*, *op. cit.*

FIGURE III - 69

HISTORIC NATIVE PLACES AND CURRENT STATUS

COOK INLET REGION

NATIVE GROUP	HISTORIC PLACES	EXISTING SETTLEMENT POPULATIONS 25 - 299	300 - 999	1000 +	STATUS UNKNOWN	SEASONAL CAMP SITE	ABANDONED	ANTIQUITY SITE
Tanaina	This is a term used by the Natives to mean people, exclusive of Eskimos and Europeans. They have also been called Knaiakhotana. The Tanaina belong to the Athapascan linguistic stock. According to Osgood (1934), they are located along the drainage of Cook Inlet north of Seldovia, the north half of Iliamna Lake and its drainage, including Clark Lake. Since contact, possibly slight incursions have been made into territory formerly occupied by the Eskimo, notably Seldovia Bay and portions of Iliamna Lake. Osgood (1936) gave the following subdivisions: Lower Inlet (Kachemak Bay area and Seldovia) Middle Inlet (Kenai Area--Tustamena, Skilak and Kenai Lakes and the adjacent coast) Upper Inlet (Knik arm of Cook Inlet and its drainage) Susitna (Susitna River and drainage) Tyonek (west coastal region of Cook Inlet) Iliamna (region of the north part of Iliamna Lake and its drainage) Clark Lake (the region about Clark Lake) The settlements of the Tanaina were:							
	Chinila, on east side of Cook Inlet near mouth of Kenai (Kaknu) River. Former Indian village reported as Chernila by Petroff in 1880 Census - population 15.						X	
	Chuitna, on northwest shore of Cook Inlet at mouth of Chuit River, 2 miles north of Tyonek. Var. Ladd. A former trading post and fishing station and Indian village.					X		
	Eklutna, at the head of Knik Arm, mouth of Eklutna River. Var. Old Knik. Indian village that may have originally been one of the Knik Villages. Present place.	X						
	Iliamna, near mouth of Iliamna River, north of Iliamna Lake. The present-day Iliamna is at a new location on Northeast Bay near Newhalen and this historic Iliamna is referred to as Old Iliamna. It is still a present place of a few people near the old site.	less						
	Kasilof, on the east coast of Cook Inlet at the mouth of Kasilof River, 12 miles south of present-day Kenai. Reported as early as 1786.	X						
	Kasnatchin, at Anchor Point, Kenai Peninsula. Former camp or settlement reported by Petroff in 1880 Census. Present place.	less						
	Kenai, on the east side of Cook Inlet at the mouth of Kenai River. Rusian post built here in 1791. Present place.	X						
	Nikhkak, on Lake Clark. Former village and boat landing. Presently a salmon season fishing village on the shore of the lake serving the permanent village (Kijik), located nine miles up the river. Also reported as Kiatagmiut Camp in Bristol Bay Region.					X		
	Kijik, nine miles up the Kijik River from Lake Clark. Former permanent village. May be same as Kichik, Kiatagmiut Village in Bristol Bay Region.						X	
	Knakatnuk, opposite Nitak on the west side of Knik Arm, at the head of Cook Inlet. Var. Knik Station. Reported in Petroff's 1880 Census.						X	
	Knik (Var. Kinik), near mouth of Knik River. Reported in Petroff's 1880 Census. A second Knik developed about Palmers Store in 1903.						X	

NATIVE GROUP

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NATIVE GROUP	HISTORIC PLACES	EXISTING SETTLEMENT POPULATIONS 25 - 299	300 - 999	1000 +	STATUS UNKNOWN	SEASONAL CAMP SITE	ABANDONED	ANTIQUITY SITE
	Kultuk, on east side of Cook Inlet near Nikishka. Var. Nikiska No. 3, Titulisk. Former Indian village.						X	
	Kustatan, on west side of Cook Inlet below Tyonek. Reported by Petroff in 1880 Census; Native population nearly wiped out by 1918 flu epidemic. Present site of oil company activity.					X		
	Nikishka, near East Foreland at head of Cook Inlet. Var. Nikiska Wharf, Nikiska No. 1. Former Indian village and boat landing. Present place being developed by oil industry.	less						
	Ninilchik, on east coast of Cook Inlet south of mouth of Kasilof River. Reported by Petroff.	X						
	Nitak, on east side of Knik Bay at head of Cook Inlet and near Eklutna. Former Indian village reported by Petroff.						X	
	Skilak, on south side of Skilak Lake, Kenai Peninsula. Former Indian village reported by Petroff in 1880.						X	
	Skittok, on Kaknu (Kenai) River, and forming part of the Kenai settlement. Reported in 1890 as Chkituk.	(part of Kenai)						
	Stebenka, four miles below Skilak Lake; occupied until 1930's.					X		
	Susitna, on Susitna River, Cook Inlet. Reported by Petroff. Post Office established in 1906.						X	
	Tyonek, on the west side of Cook Inlet. Reported as early as 1880 by Petroff. The name Tyonek has been in literature for a number of villages on the west coast of Cook Inlet. This may be explained in part by the shifts in the population. Present place.	X						
	Zdluiat, on the east side of Knik Bay, south of Nitak. Former Indian village reported by Petroff in 1880.						X	
	Seldovia, on west coast of Kenai Peninsula, east shore of Seldovia Bay. Reported in Petroff's 1880 and 1890 Census. The present place of Seldovia grew around a trading store in a Tananina Indian village. Var. Chesloknu.	X						
	Alexander, small Indian village reported in 1898, on Susitna River Delta.						X	
	Talkeetna, at junction of Talkeetna and Susitna Rivers, 80 miles north of Anchorage. Reported to be site of Tananina Indian village; it developed as a major camp when the railroad was built, and a post office was established in 1916. Present place.	X						
	Salamatof, on east shore of Cook Inlet at mouth of Salamatof Creek, 5.5 miles northwest of Kenai. Tanaina Indian village reported in 1911. Presently becoming heavily settled.	less						

Sources: Hodge, Frederick Webb (ed.). Part I and Part II: *Handbook of American Indians North of Mexico*. Washington: Government Printing Office.

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Compilation by David M. Hickok, Federal Field Committee for Development Planning in Alaska.

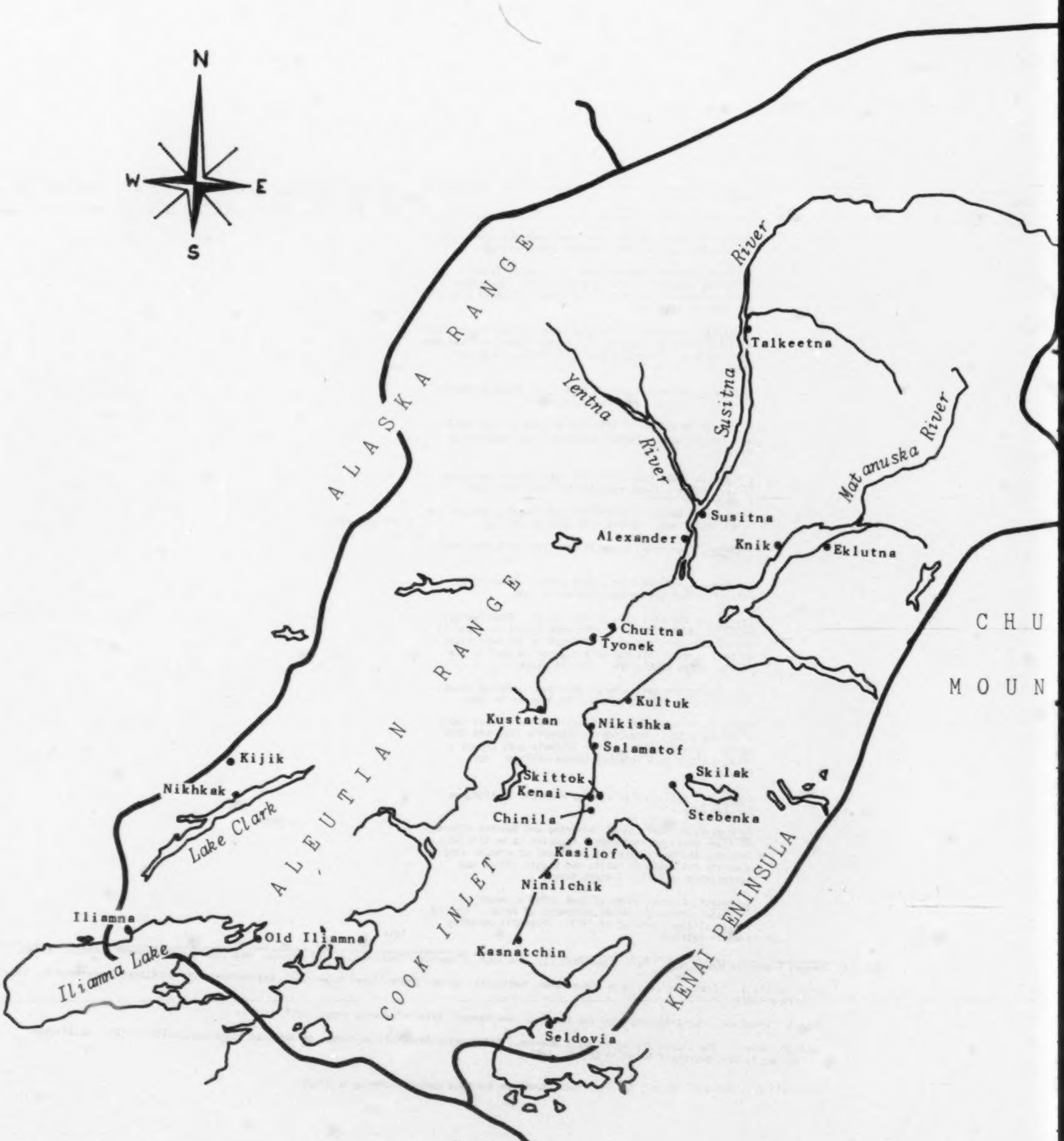
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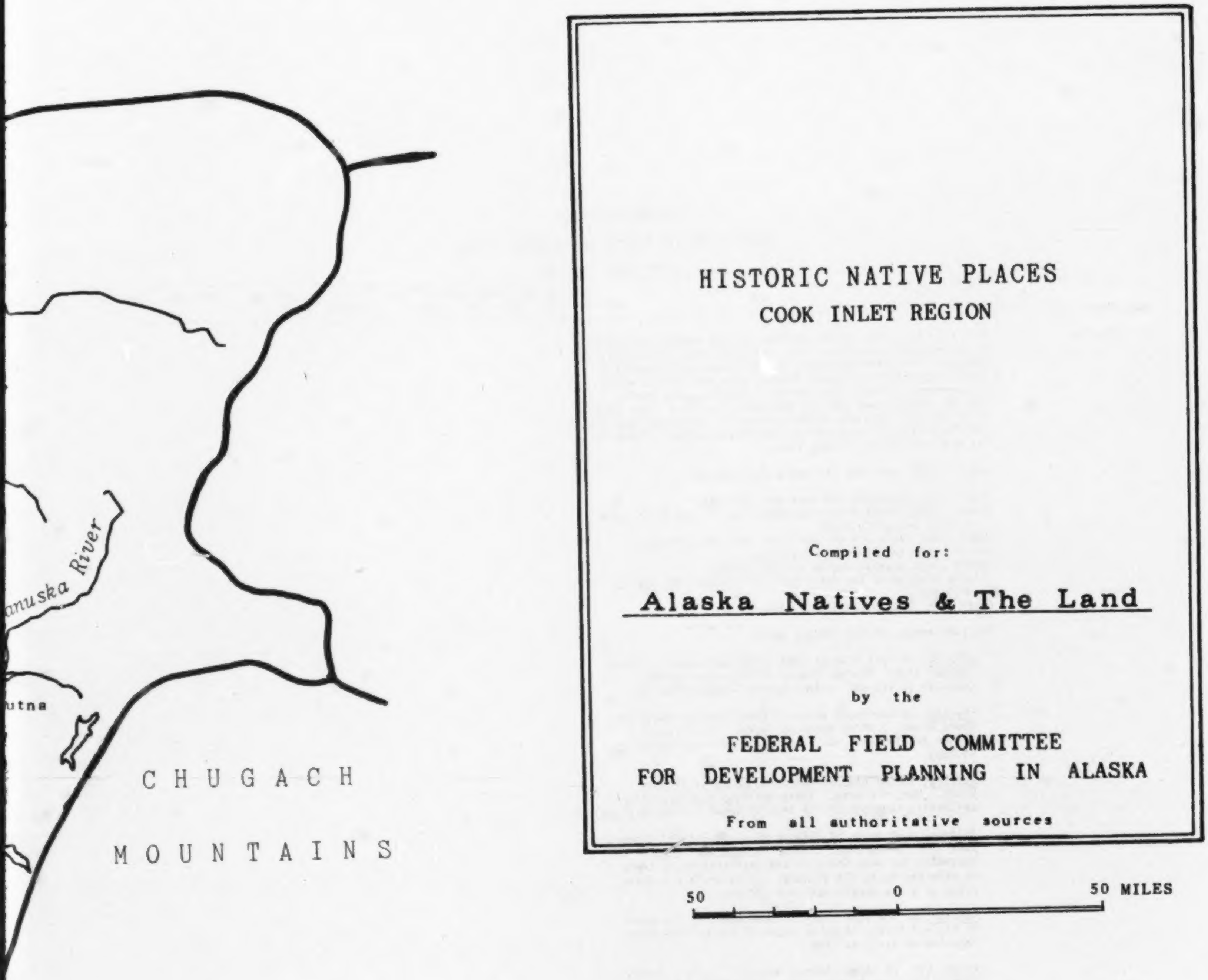
FIGURE III · 70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HISTORIC NATIVE PLACES
COOK INLET REGION

Compiled for:

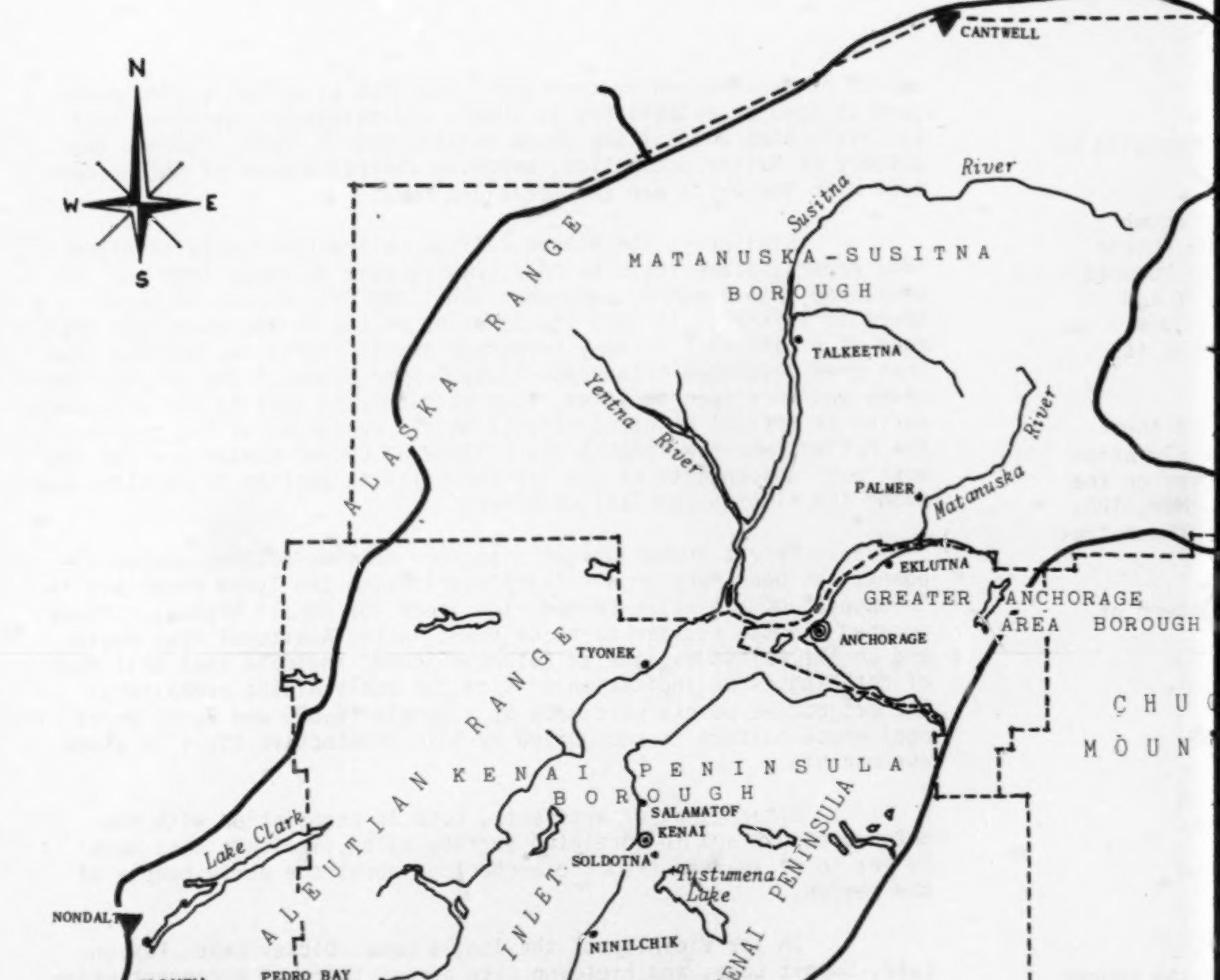
Alaska Natives & The Land

by the

FEDERAL FIELD COMMITTEE
FOR DEVELOPMENT PLANNING IN ALASKA

From all authoritative sources

GURE III · 70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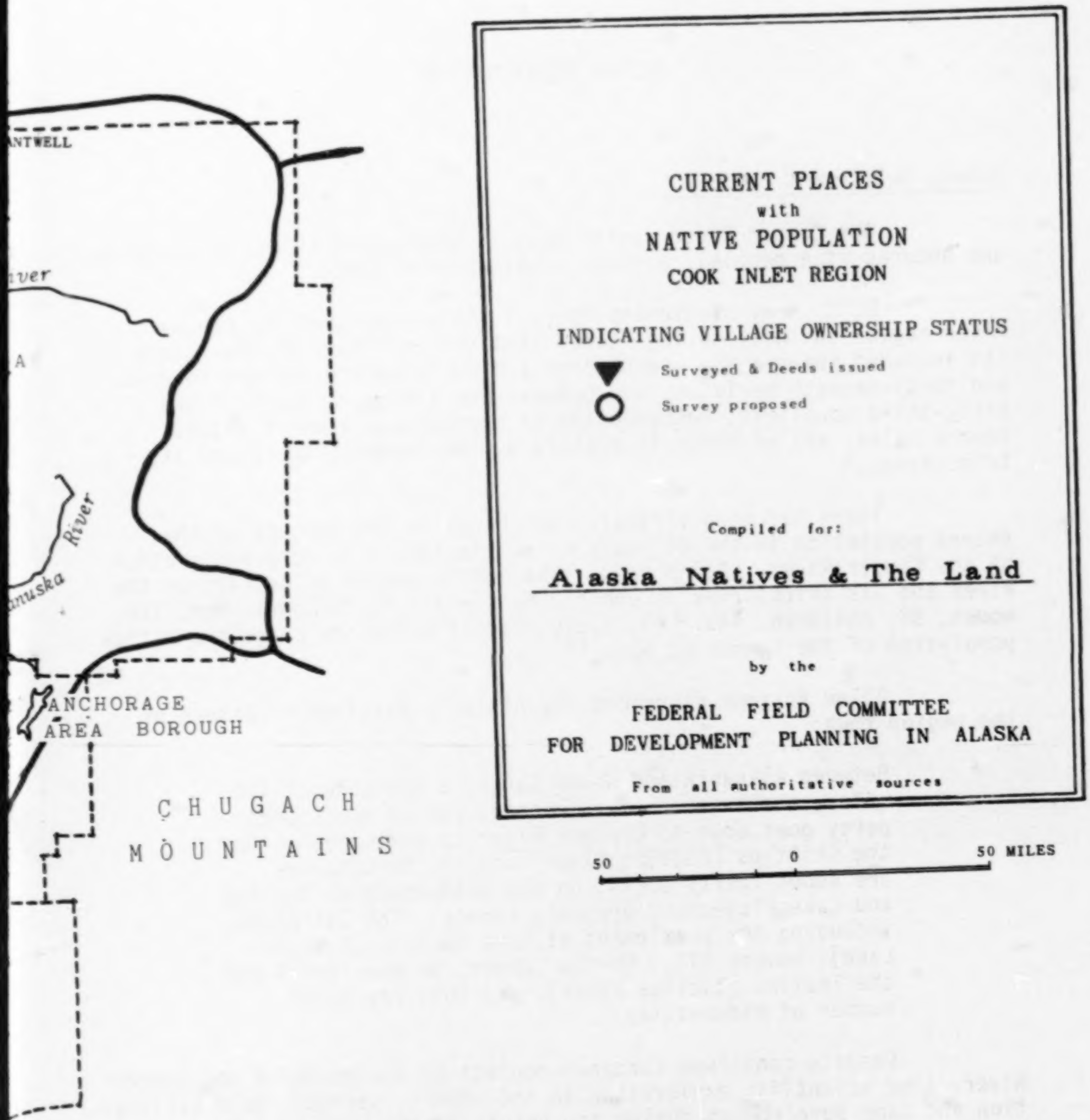
ENGLISH BAY
PORT GRAHAM

FIGURE III - 71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CURRENT PLACES
with
NATIVE POPULATION
COOK INLET REGION

INDICATING VILLAGE OWNERSHIP STATUS

▼ Surveyed & Deeds issued

○ Survey proposed

Compiled for:

Alaska Natives & The Land

by the

FEDERAL FIELD COMMITTEE
FOR DEVELOPMENT PLANNING IN ALASKA

From all authoritative sources

URE III - 71

COPPER RIVER REGION

Ethnic Settlement Patterns

The Copper River region was, in aboriginal times, occupied by the Ahtenas (ice people), a group of Athapascan stock.

U. S. Army Lieutenant Henry T. Allen explored the Copper River region in 1885. Allen stated that the territory of the Ahtena "is included between the one hundred and forty-second and one hundred and forty-seventh meridians and between the sixty and one-half and sixty-third parallels, representing an approximate area of 25,000 square miles, all of which is drained by the Copper [River] and its tributaries."

There has been virtually no change in the numbers of the Ahtena population in the 83 years since Lieutenant Allen's exploration of the Copper River. Allen said, "The entire number of natives on the river and its tributaries is about 366, divided as follows: Men, 128; women, 98; children, 140."[128] Today, latest estimates place the Native population of the region at 400![129]

Allen further described the historic settlement pattern of the region thus:

> Between Alaganik and Woods Cañon, a distance of 110 miles, there are no settlements, yet an occasional party goes down to Bremner River to hunt moose. On the Chittyna [Chitina River] and its tributaries are about thirty souls; on the headwaters of Tezlina and Lake Plaveznie, probably twenty. The Tatlatans, including the settlement at Lake Suslata [Suslota Lake], number 117. On the Copper, between Taral and the Tezlina [Tazlina River], are 209, the total number of Midnooskies.

Despite continued European contact at the mouth of the Copper River, some scientific exploration in the 1890's, sporadic gold exploration and camp development during the height of the Gold Rush Era and railroad route surveys in the early 1900's, the region remained pretty much isolated until the World War II period of highway development opened the country to access. But gradual changes in the early 1900's set the pattern for the developmental access to follow. After the period of exploration in the 1880's and 1890's, a few trading posts, such as Gakona (established in 1905), and telegraph stations, such as Chistochina and Gulkana (both established in 1902), changed the pattern of Native occupation, becoming central places of Ahtena contact with the white man for trade and work.

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[128] Henry T. Allen, "Atnatanas: Natives of Copper River, Alaska," Annual Report of the Smithsonian Institution, Washington: 1889, pp. 258-266.

[129] *Villages in Alaska and Other Places Having a Native Population of 25 or more,* compiled by the Federal Field Committee for Development Planning in Alaska, Anchorage, Alaska, 1967.

Similarly, the Ahtena village called Liebigstag in Allen's 1887 report became the site of a trading post in about 1896 and developed into a mining camp when about 300 prospectors wintered there in 1898-99. In 1901 its location on the Fairbanks-Valdez trail made it a natural U.S. Army telegraph station location, and the town that grew developed into present-day Copper Center. Its trade attractions and work opportunities, such as supplying meat to the occupants, served as a focal point to attract Native residents of the region. The Natives who now inhabit the village of Copper Center are for the most part descendants of the Tatlatans living earlier in Chyttina and along the Klutina and Tazlina Rivers.

Recent archeological discovery of side-notched projectile points has been made on a hilltop overlooking the Tyone River and in "blowouts" of a glacier-formed ridge near the Denali Highway. These notched points, similar to those found in the Anaktuvak Pass region and on the Palisades site in Kotzebue Sound, indicate that this form of notching is an indication of time for early Alaska prehistory. The projectile points were made by a people (5,000 and 7,000 years ago) whose culture is recognized by this distinctive style in stone workmanship.

Other kinds of artifacts, both in association with the notched points and in unrelated surface sites, indicate that much is yet to be learned from the archeology about the early people of the region.

In the vicinity of the Tangle Lake, Dickey Lake, Paxson Lake, Summit Lake, and Fielding Lake areas, there is a concentration of small, archeological sites which may contain materials among the earliest known for Alaska. Many of these remains of prehistoric man are of a type previously undescribed and unknown.

A site at the confluence of the Tyone and Susitna Rivers is reported to be one of the largest inland Athapascan villages prior to 1500 A.D. Other sites that are related to the same cultural period are found south of the Lake Louise and Susitna Lake narrows and on Mendeltna Creek near Tazlina Lake.

Figure III-72 summarizes what is known of the historic Native places of the region and their current status.

FIGURE III - 72

HISTORIC NATIVE PLACES AND CURRENT STATUS

COPPER RIVER REGION

NATIVE GROUP	HISTORIC PLACES	EXISTING 25 - 299	SETTLEMENT 300 - 999	POPULATIONS 1000 +	STATUS UNKNOWN	SEASONAL CAMP SITE	ABANDONED	ANTIQUITY SITE
Ahtena, signifying "Ice People." Also called:								
	Copper River Indians, popular name. Intsi Dindjech, Kutchin name, meaning "men of iron." Ketschetnaer or Kokshina, Russian name meaning "ice people." Mednofski, Russian name meaning "copper river people." Yellowknife Indians, by Ross (quoted by Dall, 1877). Yullit, Ugalakmiut name.							
	The Ahtena belonged to the Athapascan linguistic stock. Physically they are said to bear a close resemblance to the Koyukukhotana. These people lived in the Copper River Basin and were subdivided as follows:							
	According to Allen (1887):							
	Miduusky, on Copper River from its mouth to Tazlina River and its branches; and							
	Tatlazan, above the Tazlina.							
	According to Hoffman (ms.):							
	Ikherkhamut, near the mouth of the Copper River.							
	Kangikhlukhmut, at the head of the Copper River.							
	Kulchana, about headwaters of the Kuskokwim and extending probably into the valley of Copper River, but Osgood (1936) calls this "an erroneous generalized extension of the Ahtena people."							
	Kulushut, on Copper River next above the Ikherkhamut.							
	Shukhtutakhlit, on Copper River next above the Kangikhlukhmut.							
	Vikhit, next below the Kulchana.							
Ahtena	The settlements of the Ahtena people were:							
	Alaganik, near the mouth of the Copper River, in the Copper Delta, 20 miles southeast of Cordova. Former Ahtena village shared with Ugalakmiut Eskimos. In 1885 Allen discovered the village moved to a new site reported as Skatalis. Population including Eyak was 117 in 1880; 48 in 1890. Now located along Copper River highway.					X		
	Batzulnetas, on north bank of Tanada Creek, nine miles southeast of junction with Copper River. Reported in 1887 and 1895.							
	Liebigstag, on the left bank of Copper River, at or near present-day Copper Center. Reported by Allen in 1885.	X						
	Miduuski, on the east bank of Copper River, below the mouth of Tonsina Creek. Former Ahtana camp or settlement reported by Hodge in 1907. Location unknown.						X	
	Skatalis, near the mouth of Copper River, probably the original Alaganik. An Ahtena village reported by Allen in 1829 with population of 38.						X	
	Skolai, on Nizina River near the mouth of Chitistone River. Var. Nicolas Village.						X	
	Slana, at the confluence of Slana and Copper Rivers. Present place south of Glenn Highway, 53 miles southwest of Tok.	less						
	Titlogat, an Ahtena village probably of Kulchana division. Reported in 1877. Near present-day Slana.						X	
	Toral, on Copper River at mouth of Chitina River. Var. Taral. Near present place of Chitina which may have been original site of Taral.					X		
	Mentasta Lake, early Indian settlement site on more than one location around the lake. Reported by Lowe in 1898. Telegraph station here in 1902. Present place.	X						
	Suslota, village at Suslota Lake, reported by Allen 1887.						X	

Sources: Allen, Henry T. "Atnatanas: Natives of Copper River, Alaska," Annual Report of the Smithsonian Institution. Washington: 1889.

Hodge, Frederick Webb (ed.). Part I and Part II: *Handbook of American Indians North of Mexico.* Washington: U. S. Government Printing Office, 1907.

Orth, Donald J. *Dictionary of Alaska Place Names,* Geological Survey Professional Paper 567. Washington: U. S. Government Printing Office, 1967.

Swanton, John R. *The Indian Tribes of North America.* Smithsonian Institution, Bureau of American Ethnology, Bulletin 145. Washington: U. S. Government Printing Office, 1953.

Compilation by David M. Hickok, Federal Field Committee for Development Planning in Alaska.

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Environmental Livelihood Patterns

ABANDONED ANTIQUITY SITE

A relatively sparse aboriginal population in the region relied for its livelihood upon an abundant and varied wildlife population. Big game, importantly the caribou and moose, and the fish of river and stream were mainstays of life, supplemented by waterfowl and small mammals in the ways of a typical Athapascan culture.

With the increase in white population, larger demands were placed upon the wildlife resource directly for food purposes. The Native population supplied much of this harvest and received trade in return. The fur trade, too, opened economic opportunities for Native residents; and the region's fur resources through the 1920's supported a divided, subsistence-cash economy for the people.

In recent years this same abundant and variable wildlife population has become more accessible for sport and supplementary food harvest by the white residents of Anchorage and Fairbanks. Thus, the region is now a primary recreation area, and the Native resident shares in revenues derived from guiding and supplying services to the people who come for this outdoor recreational pursuit. This work today supplies the major cash income for Natives in the region, but many heads of families work elsewhere sending home the needed cash to support those at home. But, importantly, although his direct subsistence dependency upon the biotic resource is now modified, the Native family still relies on hunting, fishing, and trapping for important contributions to his livelihood. In this pursuit the Native resident ranges about 40 to 60 miles around his population centers in the region.

The commercial salmon fishery of the Copper River drainage is principally composed of red salmon of a particularly prime quality. In 1965 the commercial salmon catch had a value to fishermen of 1.5 million dollars. In this harvest both Native and white fishermen share, although the non-Native to a greater extent. The Copper River salmon fishery is also of basic importance to the local Native economy, as many Ahtena depend on it for subsistence. According to a recent Bureau of Land Management report for the classification of Copper River lands, "encroachments on traditional salmon spawning beds far upstream on the Gulkana River can profoundly affect the middle Copper River subsistence fishery, and even the economy of Cordova."

x

x

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Classification of the lands of the Copper River Basin, currently underway pursuant to Public Law 607, has important aspects pertinent to continued environmental livelihood patterns of Native residents. The classification process, if properly executed and balanced particularly as between public recreational need and Native subsistence requirements, offers a means whereby the traditional and historical rights of the Ahtena for hunting, fishing and trapping sites may be protected from encroachment.

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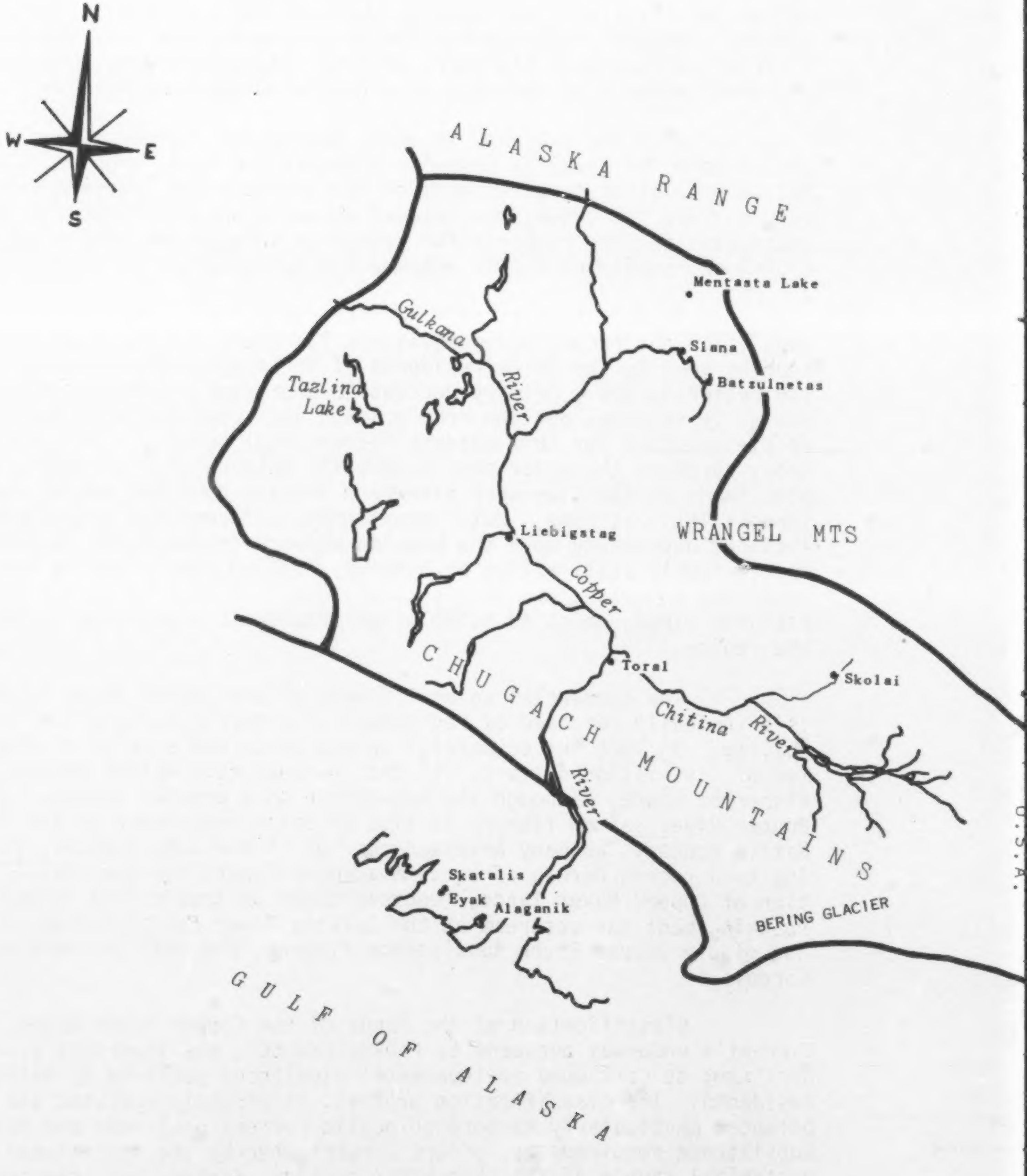
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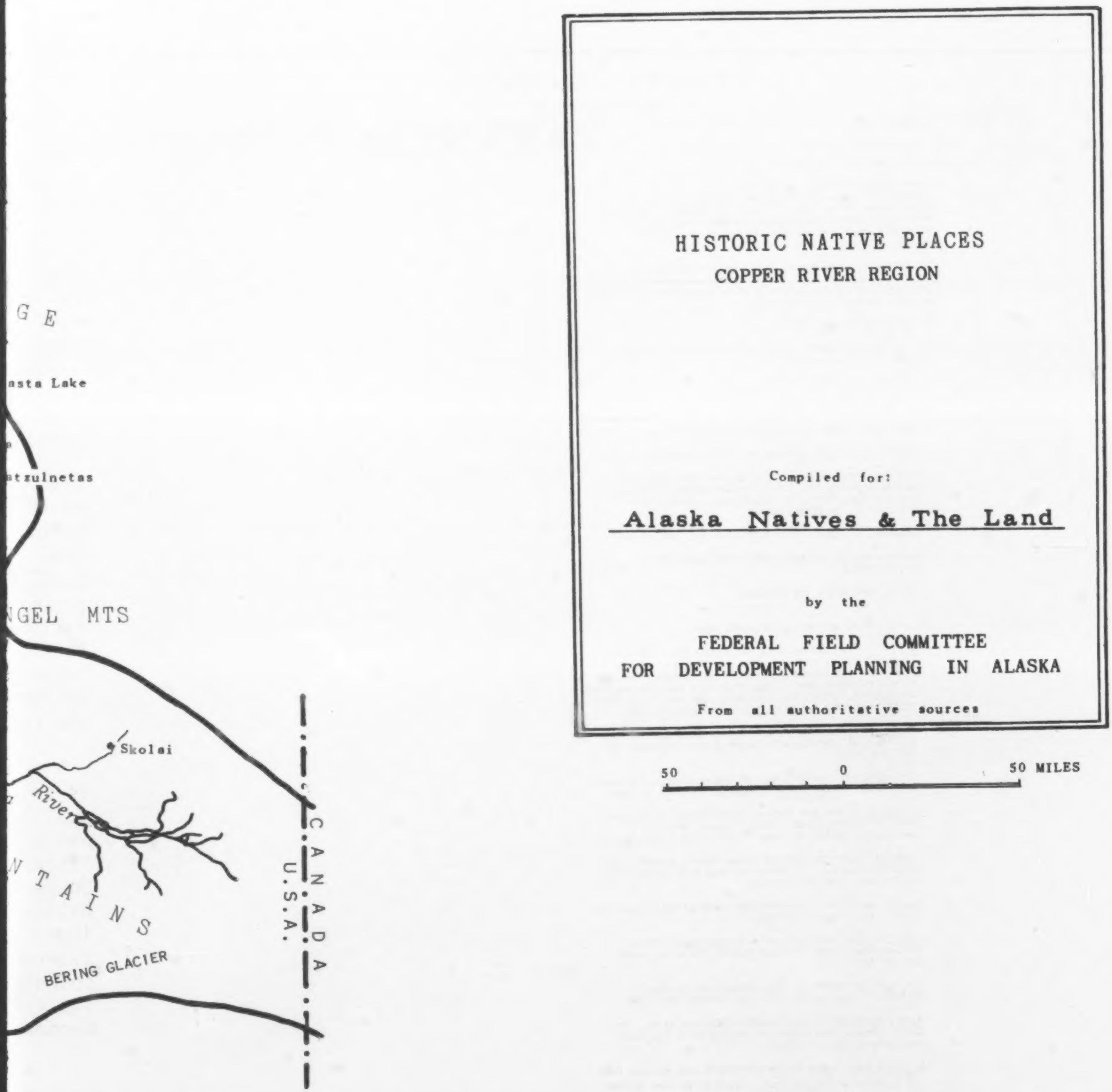
GULF OF ALASKA

FIGURE III - 73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HISTORIC NATIVE PLACES
COPPER RIVER REGION

Compiled for:

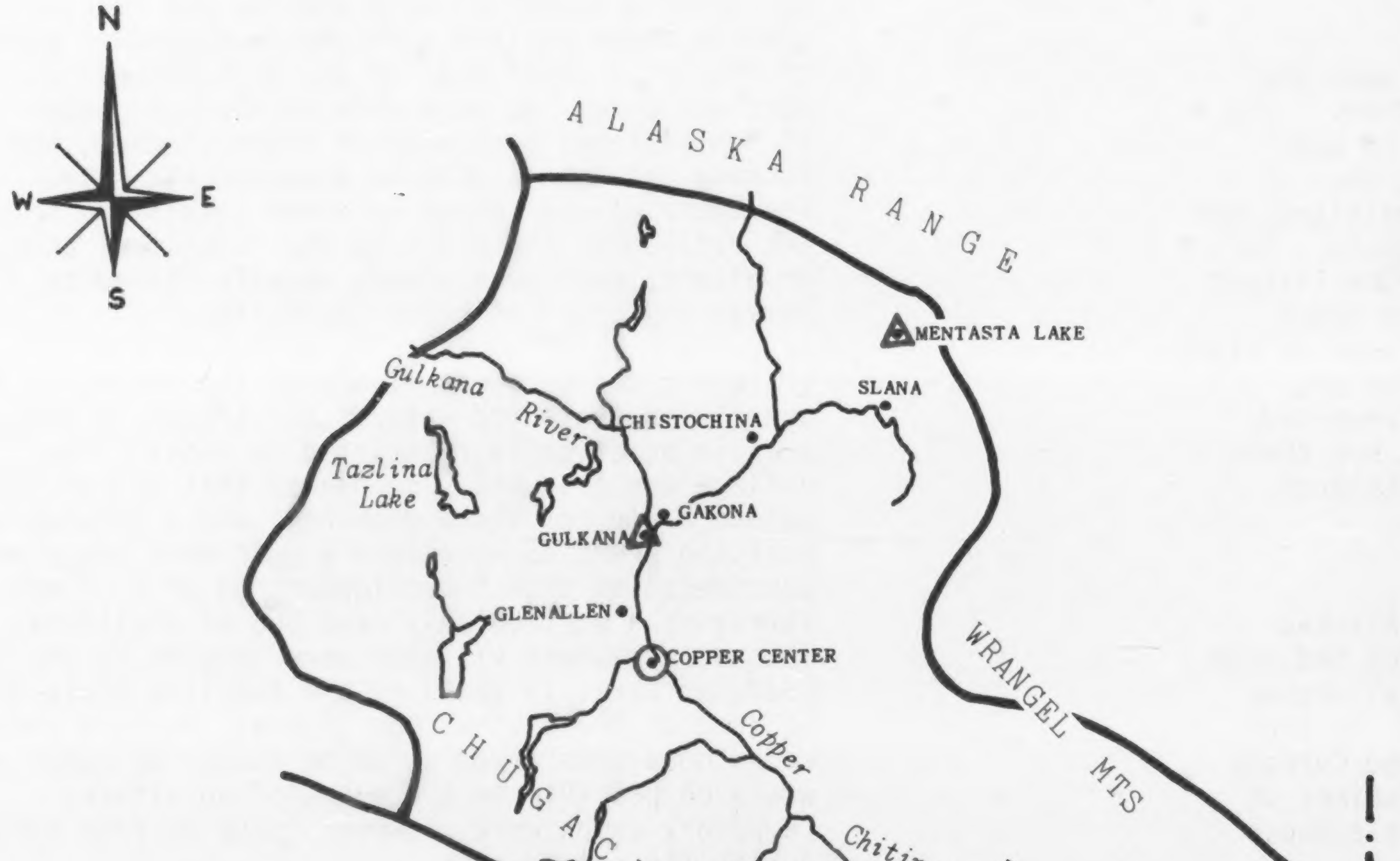
Alaska Natives & The Land

by the

FEDERAL FIELD COMMITTEE
FOR DEVELOPMENT PLANNING IN ALASKA

From all authoritative sources

FIGURE III - 73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COPPER CENTER
WRANGEL MTS
Copper
CHUGACH
Chitina
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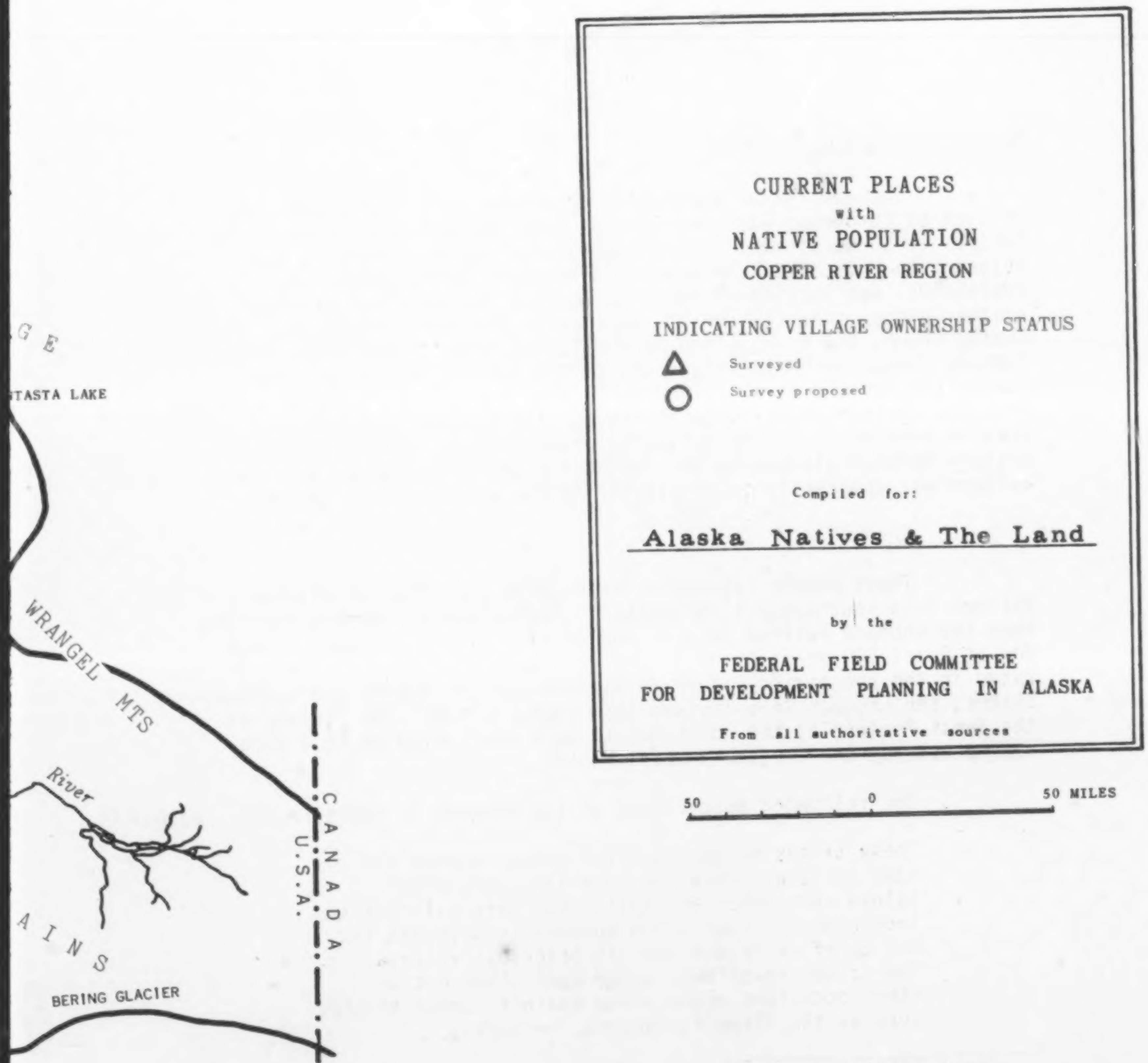
CORDOVA
BERING GLACIER
GULF OF ALASKA

FIGURE III - 74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CURRENT PLACES
with
NATIVE POPULATION
COPPER RIVER REGION

INDICATING VILLAGE OWNERSHIP STATUS

△ Surveyed
○ Survey proposed

Compiled for:

Alaska Natives & The Land

by the

FEDERAL FIELD COMMITTEE
FOR DEVELOPMENT PLANNING IN ALASKA

From all authoritative sources

FIGURE III - 74

GULF OF ALASKA REGION

Ethnic Settlement Patterns

The aboriginal population occupying this region upon the arrival of Europeans was comprised of both Eskimos and Indians. The Eskimos or Chugachigmiut (now Chugach) used the territory in and adjacent to Prince William Sound. A related Eskimo group, the Ugalakmiut, was located on Kayak Island and the adjacent mainland, and another group, the Unixkugmiut, resided on the Kenai Peninsula. An Indian group, the Eyak, lived on the Copper River Delta.[130] The Tlingit Indians ranged up the mainland coast from Yakutat Bay to at least Controller Bay and Kayak Island where they evidently displaced or mixed with the Ugalakmiut in historic times. The Chugach and Eyak are treated separately in the following presentation. Little recorded history exists relating to the Ugalakmiut and Unixkugmiut, but their culture was apparently quite similar to the more populous Chugach.

Chugach

These people represent the extreme extension of Alaskan Eskimos in a southeasterly direction. Archeological studies indicate that the Chugach existed in this region with little cultural change for at least 500 years prior to the discovery of Alaska.[131] As indicated in the succeeding Figure on Historic Native Places and Current Status, the Chugach were divided into eight tribes. The Eskimos of the Kenai Peninsula, the Unixkugmiut, were considered to be a separate people by the Chugach themselves.[132]

The following description of the Chugach is taken from de Laguna:[133]

> These tribes or geographical groups shared the same culture, spoke the same language, entertained each other at feasts, but were politically independent. Eash group appears to have had its own chief or leader and its principal village. The tribes sometimes raided each other but on other occasions might unite against common enemies such as the Tlingit, Tanaina, or Koniag.

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[130] Among Ethnographers, there is a concensus that an Eskimo group lived at Controller Bay and at least seasonally on Kayak Island and that they lost distinctive identity, probably in historic times, when their territory was occupied by Tlingits. The name Ugalakmiut used by de Laguna has been applied to the Eyaks by other writers. Oswalt in *Alaska Eskimos*, 1967, p. 5, prefers the name Tyitlkarmiut for this Eskimo group.

[131] Frederica de Laguna, *Chugach Prehistory, The Archaeology of Prince William Sound, Alaska.* Seattle: University of Washington Press, 1967.

[132] *Ibid.* p. 34.

[133] *Ibid.* p. 11.

The Chugach have a keen awareness of geography and history. Every bay, island, rocky point, or beach has its name, and many of these were the scenes of historical or legendary events. We collected a number of such stories and myths, chiefly those dealing with the southeastern part of the sound where most of our archaeological work was done. We were able to visit a number of the villages mentioned in these stories, and in many cases were able to discover the site. The myths also referred to other localities as the "villages" inhabited by the "souls" of animals or plants, but these places usually failed to reveal any trace of human habitation.

Village sites were invariably on the shore, usually on protected waters, for travel in this area is practically restricted to boats. The village was frequently so placed that it commanded a view of the approaches, and a strategic position seems to have been a much more important consideration than the neighborhood of a salmon stream or a particularly rich bed of shellfish. Thus no permanent villages were located at the heads of bays, in spite of the tempting presence of some of the best salmon streams, because these were "dead ends" from which no escape by water would be possible in the event of an attack. Temporary camps were, however, made at fish streams during the salmon runs.

Sea otter hunters made temporary camps on the exposed outer shores of Montague and Hinchinbrook islands, but there were no permanent villages in these places because of the dangers of access. It would seem probable that the houses on Kayak, Wingham, and Middleton islands were used only by hunting parties in summer. Our informants sometimes made a distinction between winter and summer villages and in other cases told us that certain settlements were inhabited throughout the year, but we could discover no obvious differences among the archaeological remains at these various types of sites except that at some places the middens were so scanty as to suggest only a short occupation (perhaps for only one or 2 seasons). There were no settlements in the interior, for the rocky hinterland of the larger islands and the mainland was frequented only by hunters. Rock shelters and caves near the shore might be used both as camping places and as burial grounds, and the rock walls of such shelters were sometimes utilized for pictographs.

Oswalt[134] gives the following description of Chugach dwellings:

> The winter dwellings appear to have been small, rectangular, plank-sided buildings with low ceilings. Summer residences ranged from shelters beneath large skin boats partially tipped over to bark-covered shelters and substantial multi-family, rectangular wooden houses. The latter form had vertical plank walls over an interior framing of posts and beams. The roofs perhaps were more or less flat and were, except for a smoke hole opening at the center, covered with bark slabs held in place with stones. Inside was a fireplace, and small sleeping rooms and a steam-bath room opened off the main room.

Vitus Bering saw Chugach hunting camps on Kayak and Wingham Islands in 1741, but Captain James Cook, who visited Prince William Sound in 1778 was the first European to meet them. After publication of his journals in 1781, Cook was followed into Chugach territory by a procession of explorers, traders, and hunters from several countries. Russian domination of the Chugach was well established by 1800.[135]

The population of these Eskimos, while low in absolute numbers, was more dense on an area basis than other Eskimo groups except the Koniag of Kodiak Island.[136]

The following population data is taken from de Laguna.[137]

1818, Imperial Inspector Kostlivitzof, 360 Chugach (172 males, 188 females).
1819, Tikmenief, in his *Historical Review*, repeats these figures.
1825, Baron Wrangell, 1,563 Chugach (782 males, 781 females).
1837-40, a terrible smallpox epidemic ravaged Alaska and must have reduced greatly the Chugach population.
1839, Veniaminof, 471 Chugach (not including "creoles," i.e., children of native mothers and Russian fathers).
1860, The Holy Synod, in publishing the number of Christians in Russian America, claimed 456 Chugach (226 males, 230 females).
1863, Imperial Inspector Kostlivitzof got the same figures for the entire Chugach population, not including "creoles."

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[134] Oswalt, *Alaskan Eskimos*, *op. cit.*

[135] de Laguna, *Chugach Prehistory...*, *op. cit.*

[136] Oswalt, *Alaskan Eskimos*, *op. cit.*

[137] de Laguna, *Chugach Prehistory...*, *op. cit.*

The figures below are quoted from the Tenth and Eleventh U.S. Census reports for 1880 and 1890. The names of the villages have been modified to conform to modern orthography:

	1880		
Nuchek	60	Chugach,	11 "creoles"
Tatitlek	73	"	
Kiniklik	54	"	
Chenega	80	"	
	267	Chugach,	11 "creoles"

	1890			
Nuchek	120	Chugach,	18	"creoles"
Tatitlek	53	"	36	"
Kiniklik	73	"		
Chenega	71	"		
	317	Chugach,	54	"creoles"

Unfortunately, the numbers and distribution of the Chugach during the present century are not accurately known. Thus, the villages of Nuchek and Kiniklik mentioned above were abandoned, but the time of abandonment is unrecorded. Chenega was abandoned following the 1964 Earthquake.

Figure III-75 summarizes population data that principally represent Chugach Natives. The data is incomplete because census statistics do not distinguish between Natives and non-Natives except as may be inferred from locations.

FIGURE III - 75

CHUGACH POPULATION DATA

Village	1920	1929	1939	1950	1960	1967
Cordova						425
Chenega		90	95			
Tatitlek	187	70	75	89	96	150
Valdez						90

Source: All data from U. S. Government Census Reports except 1967 which is from *Villages in Alaska and other places having a native population of 25 or more*, Federal Field Committee, 1967.

Eyaks

The origin of the Eyaks is clouded by conflicting comments published by numerous Europeans who confused them with adjacent groups. Smith and de Laguna[138] attempt to clarify the position of the Eyaks. They reconcile or explain published discrepancies in light of their own research, and conclude that they are Indians with linguistic similarities to the Copper River Athapascans and social similarities to the Tlingets (common moieties); despite cultural similarities (boot styles) they were not related to adjacent Eskimos. They occupied the Copper River Delta, with the Chugach Eskimos to the west and the Ugalakmiut (a branch of the Chugach) and the Tlingit Indians to the east.

The following description of their social culture is taken from Smith and de Laguna.

> There is every reason for believing that the exogamic, matrilineal *moieties* of the Eyak were introduced at a fairly recent date. This impression is sustained by the facts that neither moieties nor potlatches are mentioned in the myths. From where the importation took place seems equally clear, for there can be no doubt that the idea of moieties was borrowed from the Tlingit.[139]
>
> ....
>
> The elaborate Northwest Coast system of family crests and nobility is unknown to the Eyak, among whom the only social classes occupying particular positions were the chiefs and slaves. *Chieftainship* was hereditary, but very little actual power was connected with the office.[140]
>
> ....
>
> It is a fundamental principle in Eyak society that the *hunting grounds* are not individual property, but are owned by the tribe as a whole.[141]
>
> ....
>
> The most conspicuous trait in the administration of justice among the Eyak is *payment of a compensation* according to the size of the crime committed, not only as 'weregild' in the case of murder, but also for minor and even accidental injuries. Outside Alaska this is entirely foreign to the Eskimo, to whom blood revenge is, practically speaking, a sacred duty. . . . . [142]

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> The small size of the tribe within historic times probably prevented the Eyak from fighting on a large scale; but the general ill-feeling towards the Eskimo, provoked by Eskimo raids for Eyak women, may nevertheless have resulted in a state of permanent hostility between the two peoples.[143]

The Eyak Indians were never numerous, at least in historic times. Smith and de Laguna cite early references to Eyak numbers and the following summary is from that source.[144]

1818	117	(51 males, 66 females)
1834	150	
1839	not more than 38 families	
1863	148	(73 males, 75 females)
1880	117 at Alaganik	
1884	120 at Alaganik	
1885	8 families at Eyak	
1890	28 families at Eyak	
1890	12 families at Alaganik	
1890	154	(78 males, 76 females)
1899	59 living near canneries	
1933	38 including 19 pure Eyak, 4 half white, one quarter white, six half Eskimo, one three quarters Eskimo, five half Copper River Athapascan, and two half Japanese.	

The same authors state that the village of Alaganik was abandoned in 1892 or 1893 and that Eyak was abandoned about the end of the century with the natives of both places relocating at Cordova.

At the present time, the tribe has nearly disappeared; a few people of Eyak extraction may still exist at Cordova.

Tlingits

As mentioned earlier, Tlingits ranged up the coast from Yakutat Bay to Kayak Island and Controller Bay. Here they mixed with or displaced the Ugalakmiut Eskimos. They did not maintain permanent villages west of Yakutat Bay and none exists today. For a description of the Tlingits, reference may be made to the Southeastern Regional narrative.

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[138] Kai Birket-Smith and Frederica de Laguna, *The Eyak Indians of the Copper River Delta, Alaska,* Copenhagen: Levin and Munksgaard, 1938.

[139] *Ibid.*, p. 447.

[140] *Ibid.*, p. 450.

[141] *Ibid.*, p. 461.

[142] *Ibid.*, p. 463.

[143] *Ibid.*, p. 464.

[144] *Ibid.*, pp. 24-25.

FIGURE III - 78

HISTORIC NATIVE PLACES AND CURRENT STATUS

GULF OF ALASKA REGION

NATIVE GROUP	HISTORIC PLACES	EXISTING SETTLEMENT POPULATIONS			STATUS UNKNOWN	SEASONAL CAMP SITE	ABANDONED	ANTIQUITY SITE
		25 - 299	300 - 999	1000 +				
Chugachigmiut	Inhabited from the western extremity of the Kenai Peninsula to the delta of Copper River. There were eight tribes of these people.							
	Nuchek People, settlements were:							
	Nuchek, on Hinchinbrook Island, on the north shore of Port Etches 35 miles southwest of Cordova. This was the principal village of the Chugachigmiut in historic times. It was not settled until 1794 when the Russians established Fort Konstantive. Abandoned 1929-30 when the people moved to Cordova. Population in 1880 - 74; population in 1890 - 145.						X	X
	In addition to Nuchek, DeLaguna cites at least five other villages on Hinchinbrook Island used formerly by these people.							X
	Shallow Water People: On eastern half of Hinchinbrook Island; also villages on Hawkins and Mummy Islands and Point Whitshed at the southeastern end of the Sound. Also in former times, hunting camps on Kayak and Wingham Islands and at the mouth of the Bering River in Controller Bay. Their principal village was:							
	Palugvik, on Hawkins Island. Location unknown.						X	X
	In addition, DeLaguna cites other villages and several camping places in the area.							X
	Sheep Bay People: small group using Sheep and Simpson Bays on mainland between Cordova Bay and Port Gravina.							
	Alukaq, on Anderson Island was the main village. There is no recent historic record except DeLaguna's research and his reference to several other sites in this area.							X
	Gravina Bay People: several sites reported by DeLaguna; nothing of historic record.							X
	Tatitlek People: their settlements were:							
	Tatitlek, on the northeast shore of Tatitlek Narrows, one mile northeast of Bligh Island, 40 miles northwest of Cordova. This was reported as an Eskimo village in the 1880 Census with a population of 73. A post office was established in 1946. This is an existing settlement.	X						
	In addition to Tatitlek, DeLaguna also reports another five old village sites for these people, but no modern historic records.							X
	Kanikluk or Kaniklik (Kiniklik) People: Their settlements were:							
	Kaniklik, on the northwest shore of Prince William Sound on point of land east of Eaglek Bay. Former Eskimo settlement. Population in 1880 - 54; in 1890 - 73. Abandoned in 1930.						X	
	In addition, DeLaguna reports another eight village sites for these people.							X
	Ingamatsha (or Chenega) People: Their settlement was:							
	Ingamatsha, on a strip of Chenega Island in Prince William Sound. Reported by Petroff in 1880 Census. Post office established in 1946; village abandoned after 1964 Earthquake. At that time was Chenega.						X	
	DeLaguna also reports four other village sites and several camps for these people.							X
	Montague Island People. Makari is quoted by DeLaguna in the enumeration of 13 sea otter camps on Montague Island and five permanent villages on the more sheltered shores. Nothing, however, is available of historic record.							X
Ugalakmiut	A branch of the Shallow Water people inhabiting Controller Bay and Kayak Island; in later years they became thoroughly altered by contact with the Tlingit so that they were often classed with the latter people.							
Eyak	The Eyak villages as recorded by Smith and de Laguna included:							
	Eyak, near Mile Six of the Copper River Railway, on Eyak River about a mile below the outlet of Eyak Lake.							

NATIVE GROUP

Sources: Hodge, Off

Orth, Pri

Oswalt

Swanto Un

Compil

NATIVE GROUP	HISTORIC PLACES	EXISTING SETTLEMENT POPULATIONS 25 - 299	300 - 999	1000 +	STATUS UNKNOWN	SEASONAL CAMP SITE	ABANDONED	ANTIQUITY SITE
	Alaganik, near Mile 21 of the railroad, on the westernmost tributary of the Copper River.							
	Glacatl "Fort" below Eyak on Eyak River, where a Russian post is said to have been established.							
	"Beach" (as translated by Chief Joe) on the narrow isthmus between Eyak Lake and Cordova Bay. The site roughly corresponds to the present native village at Cordova, called Old Town.							

Sources: Hodge, Frederick Webb (ed.). Part I and Part II: *Handbook of American Indians North of Mexico*. Washington: Government Printing Office, 1907.

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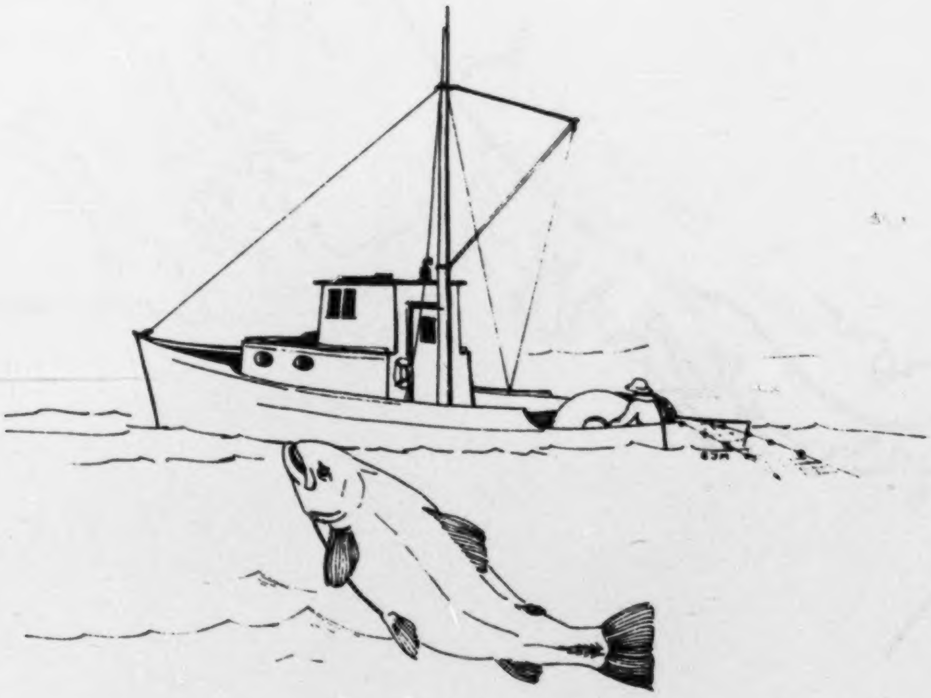
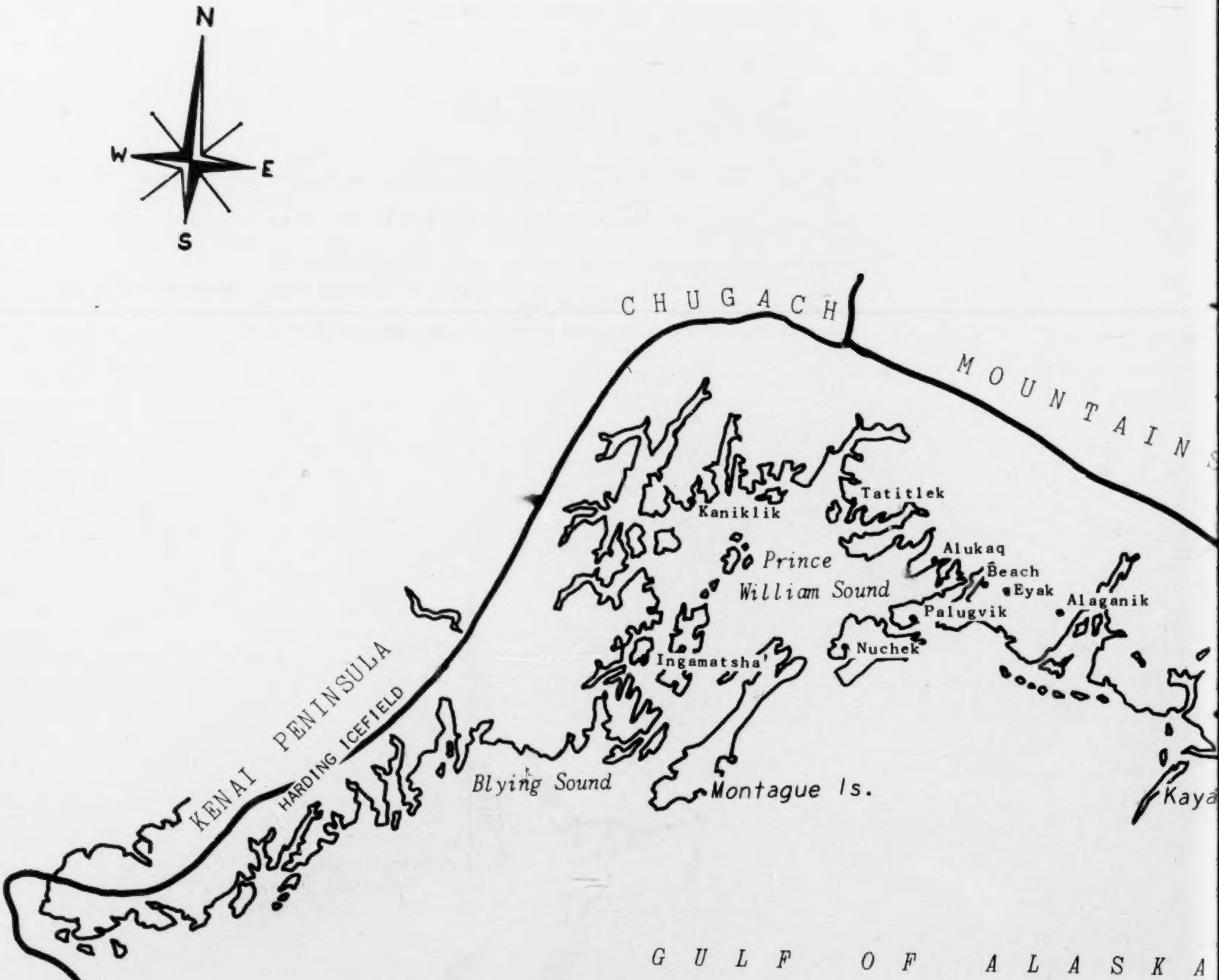
Compilation by David M. Hickok, Federal Field Committee for Development Planning in Alaska.

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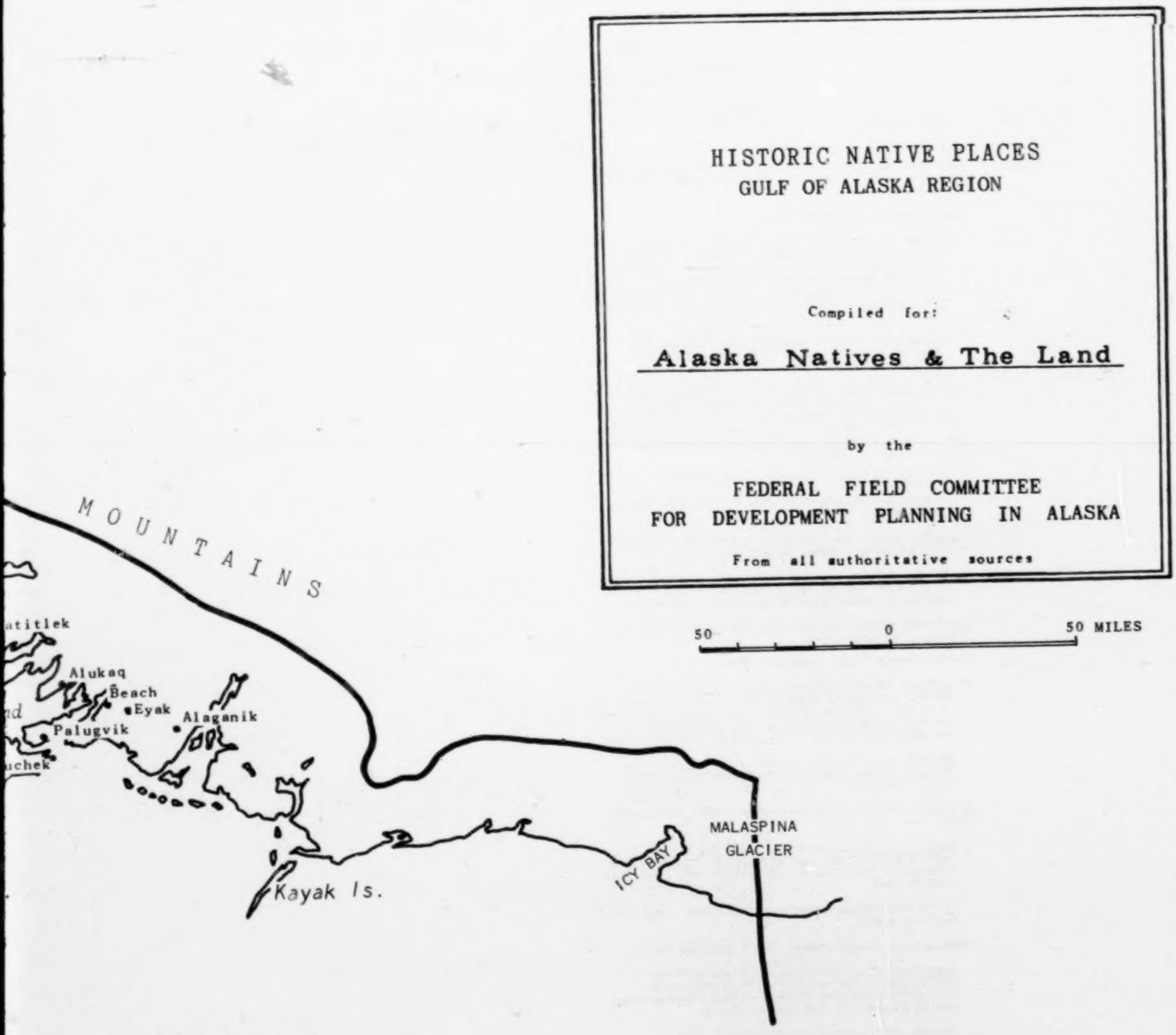
KENAI PENINSULA
HARDING ICEFIELD
Kaniklik
Tatitlek
Prince William Sound
Alukaq
Beach
Eyak
Alaganik
Palugvik
Nuchek
Ingamatsha
Blying Sound
Montague Is.
Kaya
GULF OF ALASKA

FIGURE III - 77


HISTORIC NATIVE PLACES
GULF OF ALASKA REGION

Compiled for:

Alaska Natives & The Land

by the

FEDERAL FIELD COMMITTEE
FOR DEVELOPMENT PLANNING IN ALASKA

From all authoritative sources

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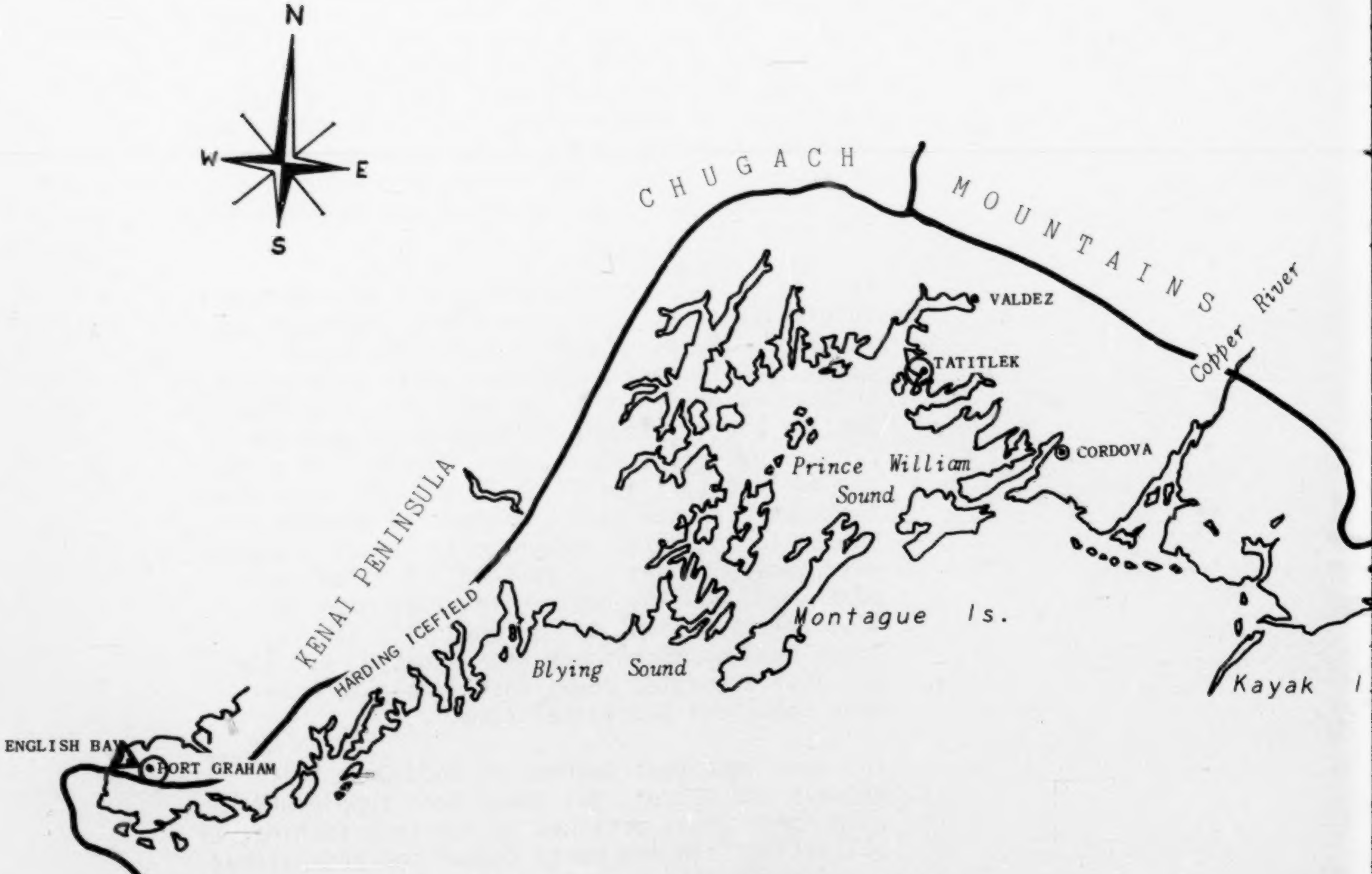
FIGURE III - 77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Copper River
VALDEZ
TATITLEK
CORDOVA
Prince William Sound
KENAI PENINSULA
HARDING ICEFIELD
Montague Is.
Blying Sound
Kayak I
ENGLISH BAY
PORT GRAHAM

FIGURE III - 78

CURRENT PLACES
with
NATIVE POPULATION
GULF OF ALASKA REGION

INDICATING VILLAGE OWNERSHIP STATUS

△ Surveyed
○ Survey proposed

Compiled for:

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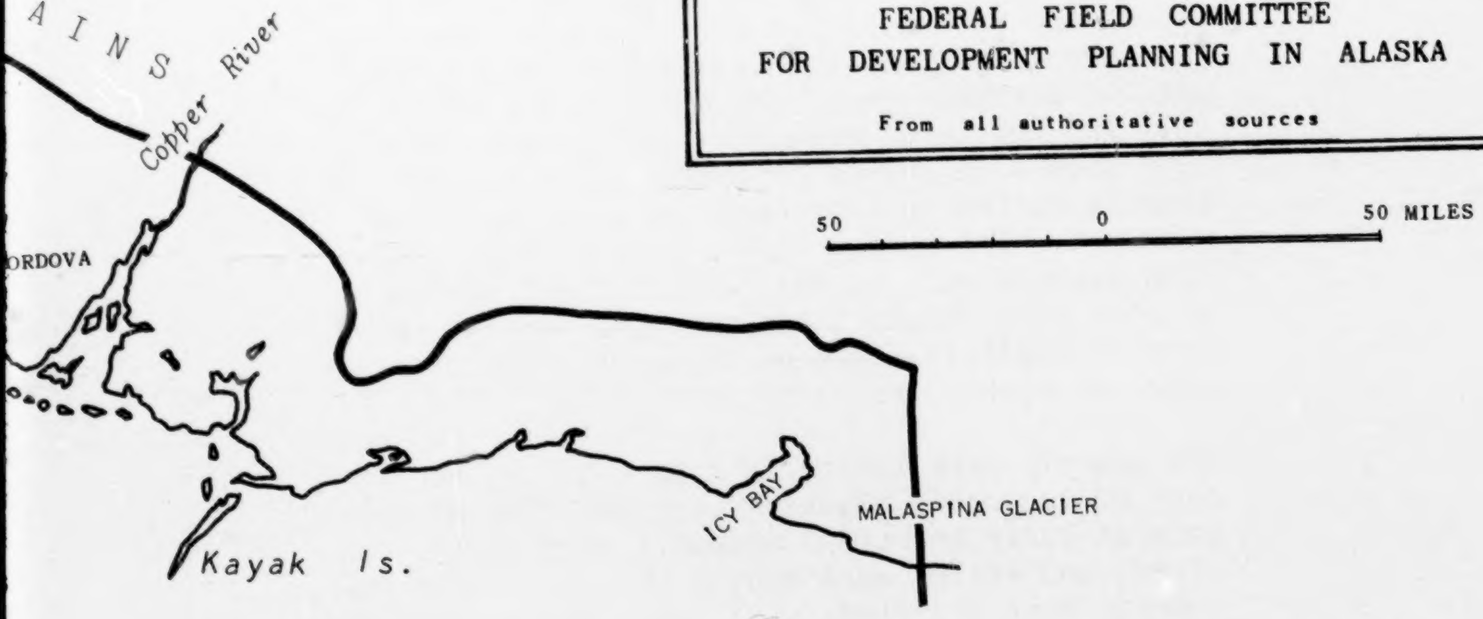
From all authoritative sources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Copper River
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Kayak Is.
ICY BAY
MALASPINA GLACIER

RE III - 78

Environmental Livelihood Patterns

Chugach

Oswalt gives the following account of early subsistence patterns among the Chugach Eskimos:

> ....In the Chugach area, king salmon began to arrive in early May, and from this time until August the other species of salmon which ascended streams included red, dog, humpback, and finally silver salmon. As these species swam up spawning streams where long weirs had been built to restrict their movements, they were taken with darts which had barbed heads. Another salmon-fishing technique was to build a trap, probably in association with a weir, at the mouth of a spawning stream which had a tidal flow. Salmon entered the trap on the incoming tide, milled about, and were stranded when the tide went out. Throughout the year the land animal most hunted was the mountain goat, which was prime in the fall and was taken with bows and arrows. Bears were caught in snares or deadfalls and might also be hunted by a man wearing a bearskin and a helmet which looked like a bear's head. Small land mammals such as fox, river otter, marten, or mink were caught in spring pole snares. A form of deadfall might be employed also for river otter or mink......
>
> Sea mammals were hunted in open water by men in one- or two-holed kayaks using some form of harpoon as their principal weapon. Hair seals, sea otter, and whales were hunted throughout the year, whereas most sea lions were taken in the fall and fur seals in the spring. The harpoons for seals, sea lions, and small whales were headed with a toggle and more often with a barbed harpoon head. In either case a line from the head led to a float, and after an animal was harpooned the float served as a drag to tire him and force him to the surface more quickly than would have been normal. Then the quarry was either harpooned again or lanced and finally killed with a wooden club. Since sea lions were large, hunters cooperated in persuing them and aided each other in towing them ashore. Hair seals sometimes were hunted at their breathing holes in the ice, but rarely, if ever, were they stalked when they slept on the ice. ....

Both large whales and sea otter were pursued in open water by hunters using kayaks with two holes. The forward opening was occupied by the hunter and the rear one by a paddler. For sea-otter hunts many kayak teams cooperated since these animals were shy and difficult to kill. The standard weapons were bows and arrows or light harpoon darts launched with the aid of a throwing board. The latter was headed with a barbed point which fit directly into a socketpiece. The head had a hole at the side for the attachment of a line to the feathered shaft. The bows used were self bows, that is, without backing. The copper arrowpoints were barbed and detached from the shaft in the same manner as a harpoon dart head. The arrows were held in a cylindrical wooden quiver which was attached to the kayak deck. ....

For the Chugach to hunt whales of large or small species, a great deal of esoteric knowledge was required. Pairs of men in two-holed kayaks cooperated in hunting whales, which were sought in bays rather than in the open sea. For the smaller species toggle harpoon heads were employed, but great whales were hunted with slate-bladed lances. In all likelihood the lance heads first were rubbed with a mixture of aconite poison and nontoxic ingredients. After a whale was lanced, it was not pursued. A ritual was performed, and the hunters returned home to wait for the animal to die and drift ashore. Other whaling techniques are reported, but the one just recounted seems most likely to have been the local aboriginal form. ....

The most important sources of food were sea mammals and salmon, but these were supplemented with other foods obtained by hunting, fishing, or collecting. In the early summer cod and halibut were caught with barbed and weighted hooks. Both candlefish and herring were obtained in large numbers, possibly in dip nets. Birds were taken with bows and arrows as well as with gorges, while cormorants were caught in nets or clubbed to death while resting at night. A wide variety of shellfish, including clams, cockles, mussels, sea urchins, and sea slugs, were collected from the beaches and were an important source of food

> when other forms could not be obtained. The plant foods included species of kelp and seaweed plus diverse berries, roots, tubers, and leaves. ....[145]

The first small deviation from a complete subsistence economy involved trade with Europeans, principally Russians seeking sea otter pelts. With the building of salmon canneries in the late 1800's, Natives found employment as both fishermen and cannery workers. Such employment opportunities were highly seasonal, however, and the Chugach have until the present day relied heavily on the subsistence utilization of fish and game resources to sustain them during part of the year. They may now be characterized as commercial fishermen, although seal hunting and trapping provide limited income. In Cordova and Valdez some Natives had found year around employment and live in a manner little or no different than citizens of other races.

Tatitlek, the largest existing Chugach community was the object of a community development survey conducted by the Bureau of Indian Affairs in 1963.[146] The conclusion of the survey report is presented below:

> Tatitlek has a Federal charter. It has a community store. It has a reserve. It has a source of revenue, from the fishing for the Cordova cannery. And it has new opportunities worth to be seriously explored. It remains to be seen whether it has the most important asset of all,- the human drive and enterprenourship to take advantage of these opportunities.

Eyak

Originally, Eyak livelihood patterns reflected or conformed with the type and availability of resources which sustained them. The following historic summary of resource utilization is taken from Smith and de Laguna.

> Both our native informants and Colonel Abercrombie recognized the salmon as the most important source of food in Eyak economy. ....
>
> There are no family, moiety, or village
>
> There were no family, moiety, or village rights over fishing camps and streams. This is explained by Abercrombie who says that there was no need for exclusive fishing rights, since there were so many salmon in the Copper River that the natives were able to catch their whole year's supply early in the season. ....

> Halibut were caught by hook and line from a canoe and might be taken in both summer and winter. ....Trout and whitefish in the lakes were caught ....The Eyak never chopped holes in the ice for winter fishing.
>
> ....
>
> The only sea mammals hunted by the Eyak were the seal and sea-otter. They did not hunt fur seals because they were afraid of them, but killed the small harbor or hair seal. They did not hunt porpoises like their Eskimo neighbors, and they were afraid of the walrus because these animals were supposed to be transformed human beings. Walrus, moreover, always seem to have been scarce in this region. They did not hunt whales, but when a dead one was found they ate the flesh (?), and the fat, and utilized the baleen.
>
> Goats and bears were the most important land animals hunted by the Eyak. The former were sought in the mountains above Mountain Slough. They were commonly driven towards hunters in ambush, but fences were not built for these drives, nor could fire be used because it was generally too wet. Dogs were trained to chase and hold a goat until the hunters could kill it. Goats were killed with arrows or with spears if the hunter could get close enough.
>
> ....
>
> Both brown (Kodiak grizzly) and black bear were hunted. The Eyak sometimes went up Orca Inlet after bear, though this was trespassing on Eskimo territory. Bears were hunted in winter. Dogs would locate the dens and the hunters would tease the bear until it came out. A man stood above the hole and speared the bear as it emerged. Another method was to erect a number of spears in the ground, if a soft place could be found. The spears were set with their points inclined forward. A man would tease the bear, and when pursued would dodge behind the spears, allowing the bear to become impaled.

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[145] Oswalt, *Alaskan Eskimos, op. cit.*, pp. 129-131.

[146] L. A. Kozely, *Native Village of Tatitlek, Alaska.* Community Development Survey, Bureau of Indian Affairs, 1963.

> The beaver was not hunted under the ice in winter, but was killed in spring and fall with a deadfall set in the beaver trail.
>
> The fox and lynx were killed with snares fastened to bushes. Other animals may have been killed in snares, but Galushia is not sure. The snare is mentioned in Tale 20. The fox was also caught in a pit.
>
> Mink and martins were taken in deadfalls. A piece of wood with a slot in it, found at Alaganik (P-UM 30-25-99f, Plate 11.3), was identified by Galushia as part of a deadfall for mink, but he did not describe the trap. Tale 5 tells of catching groundhogs in deadfalls.
>
> The muskrat was shot with bow and arrow.
>
> The weasel or ermine was caught in a box trap, buried in the ground. A little plank was so arranged that the animal would walk out on it and be tipped into the box.
>
> The birds hunted by the Eyak include the various species of duck, geese, swan, ptarmigan, and grouse. The last two could be hunted during the winter, since they remained all the year round. The other birds, however, were killed chiefly in August when they were moulting. The Eyak used sharp-pointed arrows or clubs. It was customary for all the inhabitants of the village to join in driving the moulting birds along the sloughs to a narrow place where they could be forced ashore. In that case, they could be killed by simply wringing their necks. ....[147]

Because the territory of the Eyaks was the center of much activity, including salmon canneries, mineral exploration, railroad construction, and trading enterprises commencing as early as the 1880's, the Eyaks' traditional way of life was seriously disrupted. Judging from their decline in numbers, their adjustment to changing conditions imposed by non-Natives was far from being successful, although a willingness to marry outside of their tribe may have been an important element in the fairly rapid loss of their identity.

SOUTHEAST REGION

Ethnic Settlement Patterns

Two groups of Indians, the Tlingits and the Haidas, occupied southeastern Alaska at the time of initial European contact with the region. The history of these Indians has been thoroughly researched in connection with a suit which they brought against the United States.[148] The following presentation is taken directly from the findings of fact made by the court and gives us important insites into their ways of life.

Cultural Characteristics

> The Tlingit Indians or their ancestors first migrated into southeastern Alaska many generations before the first arrival of a white man. The movement of the Haida Indians into this territory did not take place until years later. The Haida Indians pressed in upon the Tlingit, coming north from their home on Queen Charlotte Island and wresting from the Tlingit the southern shores of Prince of Wales Island. This migration of the Haida Indians occurred about the middle of the 18th century and before any part of this territory had been visited by any white man.
>
> ....
>
> Among northwest coast Indians, the Tlingit and Haida Indians each formed distinct groups. Each represented a high level of development of northwest coast Indian culture. The Tlingit Indian had a consciousness or awareness of his identity as a Tlingit. He called himself a Tlingit. Under the social organization of his people, he knew himself to be a member of a particular Tlingit family or clan and to belong to a particular Tlingit community or tribe. In the same manner, each Haida Indian knew himself to be a Haida. The Tlingit Indians spoke the Tlingit language and the Haida Indians, the Haida language. Neither was intelligible to the other, nor to any other people.

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[147] Birket-Smith and de Laguna, *op. cit.*, pp. 107-113.

[148] *The Tlingit and Haida Indians of Alaska vs. United States*, 177 F. Supp. 452.

....

The Tlingit Indians as of 1867 had no chief or other political body to govern them as a group. The Russians on at least two occasions had appointed a head chief for all the Tlingit, but these appointments had not changed the established customs of the Indians, which featured many highly developed rights, such as rights to authority, possessions, and prestige. None of these rights encompassed any authority over the entire Tlingit people. ....

....

The term "tribe" is frequently employed to describe the entire Tlingit people, as well as the Haidas as a whole. It is also used in connection with their various divisions and subdivisions, as hereinafter described. As so variously applied, it has been used loosely and in an inexact sense. There were no political divisions of these Indians to which the term "tribe" can be technically applied. However, in an anthropological sense, the term has been most frequently applied to specific groups of these Indians who were located in certain areas of southeast Alaska. The term, as applied to these Indians, has geographical, rather than any political or organizational significance. ....

The social structure and various divisions and subdivisions of the Tlingit and Haida Indians are as follows:
As stated .... neither the Tlingit nor Haida, as such, was a political organization. Technically, these terms refer only to two separate, native languages, the Indians speaking these separate languages having come to be referred to as 'Tlingit' or 'Haida' Indians. The word 'Tlingit' means 'man' in their language.

All of these Indians were divided into two phratries or moieties. Among the Tlingit, one was called Wolf and the other Raven, and among the Haida, one was called Eagle and the other likewise Raven. Similarly, neither moiety had any social or political organization.

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Each moiety was in turn divided into a number of clans, membership in which descended through the mother. Each clan had its own distinctive name, traditions, and crests. Marriage within the clan or moiety was forbidden. Originally there were approximately 55 of these clans, which, again, had no social or political structure. Indians of these various clans, however, settled throughout the Tlingit and Haida territory, and the division of a larger clan which settled at a certain site or permanent village became known as a local clan. Thus, a clan was often distributed or divided among several villages, some of the larger clans being widely scattered throughout southeastern Alaska. However, other clans were wholly localized in a single community.

Since no one in the clan could marry anyone else from that clan, a local clan had to associate with another local clan from the opposite moiety. Thus the two local clans from the opposite moieties settling in a village would constitute a 'tribe.' Usually, however, several local clans would settle in a village.

The local clan divisions in a village were made up of house groups. A village consisted of a number of large houses of the local clans, each house sheltering a number of families. Some houses were large enough to shelter a dozen families.

Each house had a local clan designation. Its nucleus was the men of that clan, usually related to each other, such as brothers. The house had its highest ranking man, or chief, usually the eldest member of the house. Also, each local clan in the village had its highest ranking house, the chief of which was recognized as the highest ranking local clan chief. Thus, it was the local clan subdivision and the house group of families which had any semblance of social or political organization.

As will be hereinafter more fully described, the local clans in the village owned or claimed, in accordance with the Indian manner, large areas adjacent to the village. In some of these areas so owned or claimed, there were two or more villages, sometimes not distantly separated, in which case the Indians of all these villages, comprising all their houses and local clans, were known as a 'tribe.' While there was no head of a tribe as such, nevertheless there was a sense of tribal unity and a community feeling of belonging to a particular geographical unit, which was bound together by ties of intermarriage, as well as ceremonial relationships.

In 1867, the names of the Tlingit and Haida tribes, and the names of their principal winter villages, were as follows:

Name of Tribe	*Name of Villages as of 1867*
TLINGITS	
1. Yakutat	Yakutat
2. Chilkat-Chilkoot (sometimes referred to merely as the Chilkats, the Chilkoots being considered as a subdivision)	1. Klukwan 2. Kalkwalt 3. Chilkoot 4. Yandestuka 5. Diea
3. Huna	1. Huna 2. Tuxugu
4. Auk	Aynskultu
5. Taku-Sumdum (sometimes referred to merely as the Takus, the Sumdums being considered as a subdivision)	1. Taku 2. Sumdum
6. Hutsnuwu (sometimes referred to as the 'Angoons')	1. Basket Bay 2. Angoon 3. Killisnoo 4. Neltushkun
7. Sitka	Sitka
8. Kake	1. Kake Village 2. Kake
9. Kuiu	Kuiu
10. Stikine	Wrangell
11. Henya	1. Shakan 2. Tuxekon 3. Klawak

12.	Sanya (sometimes referred to as the 'Cape Fox' Indians, as well as the 'Saxman' Indians)	1. Yes Bay 2. Cape Fox 3. Loring
13.	Tongass (sometimes the Sanyas and the Tongass are grouped together as one tribe, the Tongass)	Tongass
	HAIDAS	
1.	Kaigani	1. Kasaan 2. Sukkwan 3. Hawkan 4. Klinkwan 5. Koianglas

At the present time the Tlingit and Haida Indians live in a number of native villages which are almost entirely Indian, but some live in large communities in principal cities of Alaska. The following are the names of the modern communities where the Indians of the Tlingit tribes live: 1. *Yakutat* tribe: Yakutat (located at the same place as the original village); 2. *Chilkat-Chilkoot* tribe: (a) Klukwan (located at the same place as the original village), (b) Haines; 3. *Huna* tribe: Hoonah (located at the same place as the original village of Huna); 4. *Auk* tribe: Juneau; 5. *Taku-Sumdum* tribe: Douglas; 6. *Hutsnuwu* tribe: Angoon (located at the same place as the original village); 7. *Sitka* tribe: Sitka (located at the same place as the original village); 8. *Kake* tribe: Kake (located at the same place as the original village); 9. *Kuiu* tribe: none; 10. *Stikine* tribe: Wrangell (located at the same place as the original village); 11. *Henya* tribe: Klawak (located at the same place as the original village); 12. *Sanya* tribe: Ketchikan; 13. *Tongass* tribe: Saxman.

The Haidas now live in Hydaburg.

Yakutat, Klukwan, Hoonah, Angoon, Kake, Klawak, Saxman, and Hydaburg are the native villages.

....

> The population of the Tlingit and Haida Indians prior to 1867 and as of that approximate year has been variously estimated. An actual count of these Indians was not obtained with any accuracy until long after 1867. The first census takers worked in Tlingit and Haida territory during the summer season when the Indians were scattered and the results were therefore uncertain. Earlier counts were made in a few communities, but not over the entire Tlingit and Haida territory. Moreover the population was drastically reduced by smallpox epidemics in 1787, 1836, and 1862, and typhoid in 1819, 1848, and 1855. On all the evidence, it is reasonable to conclude that the population of the Tlingit and Haida Indians in early historic times was approximately 10,000 and that in 1867 this population was approximately 6,000. This latter level of population, which reflects in part the changed conditions brought about by the advent of white civilization, has remained comparatively stable to the present time, being now approximately 7,000. [149]

Elements of a third Indian group, the Tsimsnians, migrated to Annette Island from British Columbia quite recently:

> About 1860, William Duncan, an English missionary, established at Metlakahtla in British Columbia a Christian community of Tsimshian Indians. Under Duncan's leadership, the community prospered. The Indians built individual homes and learned many arts and crafts of the white man's civilization. The community established its own stores and industries and became a trading rival to the Hudson's Bay Company. After 25 years, the success of the community at Metlakahtla was widely known among whites and Indians in British Columbia and southeast Alaska. At the same time, Duncan encountered increasing ecclesiastical difficulties as well as from government authorities in British Columbia. He came to the United

> States, and in 1887 visited Washington, seeking for his colony a home in southeast Alaska. He sought to purchase an area of land for this purpose, but ascertained that there was no law which authorized such a sale, no land laws having been as yet enacted for Alaska. In Washington, Duncan was advised by high officials in the executive branch of the Government, including the Secretary of the Interior and the Attorney General, that he and his people could go to Alaska and obtain, as individuals but not as a colony, squatters' rights to the land. He was encouraged by various government officials to do this. Accordingly, in the spring and summer of 1887, the Metlakahtla Indians emigrated from British Columbia and settled on one of the group of Annette Islands in the southern part of southeast Alaska. They numbered about 800 Indians and came under the guidance of Duncan and his missionary staff. By 1890, the colony, called Port Chester, and also 'New Metlakahtla', consisted of between 150 and 200 log and wood frame homes with a well-equipped store, a salmon canning plant, a sawmill, a trade school, and a mission church.[150]

The act of March 3, 1891, (26 Stat, 1095, 1101) set apart the Annette Islands as a reservation for the Metlakahtla Indians.

Environmental Livelihood Patterns

The historic environmental livelihood patterns of the Tlingit and Haida Indians were strongly influenced by the rich supply of resources which varied in location and abundance according to the season. These livelihood patterns are also extensively reported in the findings of fact made by the court in *The Tlingit and Haida Indians vs. United States*, 177 F Supp. 452. The following descriptions are from this source.

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[149] *Ibid.*
[150] *Ibid.*

FIGURE III - 79

HISTORIC NATIVE PLACES AND CURRENT STATUS
SOUTHEAST REGION

NATIVE GROUPS	HISTORIC PLACES	EXISTING SETTLEMENT POPULATIONS			STATUS UNKNOWN	SEASONAL CAMP SITE	ABANDONED	ANTIQUITY SITE
		25 - 299	300 - 999	1000+				
TLINGIT	The Tlingit were originally constituted into one linguistic stock by Powell, but show resemblances to the Athapascan dialects and to Haida. These people inhabited all of the coast and islands of Alaska from Yakutat Bay inclusive southward with the exception of the southern ends of Prince of Wales and Dall Islands and Annette Island. Their subdivisions and settlements were:							
	Auk, on Stephens Passage and Douglas and Admiralty Islands, including the following settlements:							
	Anchguhlsu (Var. Aynskultu), opposite the north end of Douglas Island.						X	
	Tsantikihin, on the site of the present day Juneau. Var. Tsentakahini. First reported in 1909 as Tsantikihin by Swanton. Juneau is now principal place of Auk people.			X				
	Chilkat, about the head of Lynn Canal, including these settlements:							
	Chilkoot, between Lutak Inlet and Chilkoot Lake, in course of Chilkoot River, on the northeast arm of Lynn Canal. 12 miles SW of Skagway. Var. Chilcoot, Tananei, Tenany, Tschilkut. First reported in 1880 Census by Petroff as Chilcoot. Population in 1890 - 106.						X	
	Deshu, at the head of Lynn Canal, site of the present Haines. Population 392. According to Aurel and Arthur Krause, called "Deshu or Daschy" (1883). Present place.		X					
	Dyea (Var. Diea), at the modern place of the same name. Former Chilkat Tlingit Indian village which became noted during Yukon gold excitement in 1800's. Postoffice established 1896 - 1902. After construction of White Pass and Yukon Railroad in 1902. town began to decline. The present place is now used as a fishing and hunting camp.					X		
	Katkwaahltu, on Chilkat River about 6 miles from its mouth. Former Tlingit Indian town reported as "Kutkwutlu" in 1880 Census, Petroff - population 125.					X		
	Klukwan, on north shore of Chilkat River 20 miles from its mouth, 1.4 miles SE of Glass Point and 21 miles SW of Skagway. Reported in Census of 1890 as Klakwan. Population 112. Tlingit Indian village, the name of which was reported by U. S. Navy in 1880 as Chilcat of Klukqan. Present place at site of original place and now, with Haines, principal place of Chilkat people.	X						
	Yendestake (Var Yandestuka), at the mouth of Chilkat River, present site of Haines Airport. Petroff, 1880 Census, reported it as "Yondestuk" - population 171.					X		
	Gonaho - their settlement was:							
	Gonaho, at the mouth of Alsek River, at Dry Bay, about 50 miles SE of Yakutat, St. Elias Mts. Var. Gonaxo Gunahho. First reported in 1904 by Swanton. Former Tlingit town.					X		
	Hehl - their settlement was:							
	Hehl, on Behm Canal. No reference given. Location unknown.					X		
	Henya or Hanega, on the west coast of Prince of Wales Island between Tlevak Narrows and Sumner Strait, including the following settlements:							
	Klawak, on the west coast of Prince of Wales Island, 5 miles N or Craig. (Var. Chlawakkon, Klawock) Reported as "Klawak" in 1890 Census - population 261. Tlingit Indian village reported 1853, Russ. Hydrog. Dept. Chart - 1493. Post office established 1882. Cannery established at present site in 1878. Thriving village - fish cannery - road being built across Prince of Wales to it. Present place of Klawockis at same site as original village is now principal place of these people.	X						

NATIVE GROUP	HISTORIC PLACES	EXISTING SETTLEMENT POPULATIONS			STATUS UNKNOWN	SEASONAL CAMP SITE	ABANDONED	ANTIQUITY SITE
		25 - 299	300 - 999	1000 +				
TLINGIT (Contd)	Shakan, a summer village on the northwest coast of Prince of Wales Island, at the head of Shakan Bay E of Hamilton Island, on NW coast of Kosciusko Island. (Var. Caxan, Chican, Hamiltons Mills, Olivers Place, Tsichoan) Population in 1890 - 38. Former Indian village that "grew up" in 1879 around a sawmill established by O. Fontziy. Summer village for Henya Tribe of Tlingit Indians who came here for fish eggs.					X		
	Tusican (Var. Tuxekon), on a narrow strait on the northwest coast of Prince of Wales Island, at north entrance to Tuxekan Narrows; Former Tlingit Indian village reported in 1895 as "Tuxeau" and in 1899 as Tuxecan" by USC&GS. "An old Tlingit town belonging to the Henya ... Formerly it was the chief Henya town, but the Henya have now moved to Klawak." - Hodge. Old clearing, few cabins, totem poles remain.					X		
	Huna, on Cross Sound, encamping in summer northward beyond Lituya Bay. Village population 686, on E shore of Port Frederick, 2.5 miles south of Point Sophia. On Icy Strait, 40 miles west of Juneau, with these settlements:							
	Akvetskoe, a summer village on Lituya Bay. Var. Ahkvaystkie, Akwetz. Tlingit Indian summer camp with a population of 200 in 1835, reported as "Ahkvaystkie" by Veniaminov in 1840.					X		
	Huna (Var. Gaudekan) in Port Frederick on the north shore of Chichagof Island. Population 800 in 1880. Principle Huna village. Post office established in 1901. Present day Hoonah at original site of Huna is principal place of Huna people.	X						
	Hukanuwu, on the north side of Cross Sound between the mainland and Chichagof Island. Former Huna Tlingit Indian town. Reported by Hodge, 1907.					X		
	Tuxugu (Var. Klughuggue), given by Petroff (1884) as a town on Chichagof Island but probably identical with village on the mainland opposite Huna. Former Huna Tlingit Indian camp or settlement. Reported by Petroff with a population of 108 - 1880 Census.					X		
	Tlushashakian, on the north side of the west entrance to Cross Sound. Locality at or near Cape Spencer.					X		
	Hutsnuwu, on the west and south coasts of Admiralty Island, west central part of Admiralty Island in the vicinity of Kootznahoo Inlet, with these settlements:							
	Angun, north of Hood Bay, Admiralty Island. On west coast of Admiralty Island, 41 miles NE of Sitka. Population 395. Var. Augoon. Village lost much of its population in the late 1880's when Killisnoo was established with a fish reducing plant. Post office established in 1928. Present place Angoon on same site as original village is principal place of Hutsnuwu people.	X						
	Killisnoo, on east coast of Killisnoo Island near Admiralty Island, 2 miles south of Angoon; Var. Kanasnu, Kenasnow, Killishoo. Former Tlingit Indian village, population in 1890 - 79, 351 in 1910, 256 in 1920. Former village established about 1881 when members of the Hutsnuwu tribe of Tlingit Indians were brought from the villages of Angoon and Nahltushkan to work in a fish rendering plant.					X		
	Nahltushkan, on north shore of Whitewater Bay, on the west coast of Admiralty Island. Var. Neltuchkin, Naltuck-an, Neltuschk-an, Scutshon. Population in 1880 was 246. Moved to Killisnoo.						X	
	Kake, on Kupreanof Island, the designation being sometimes extended to cover Kuiu and Sumdum, and including a village of the same name:							
	Kake, village population 455, on NW coast of Kupreanof Island. (Var. Keku, Sikanakhseni.) Tlingit Indian village named for the Kake tribe living there. The original local village name was "Sikanakhseni" reported by Hodge, 1907. Fishing and canning are the economic base of the town. Post office established in 1904. Present place at site of original village is principal place of these people.	X						

NATIVE GROUP	HISTORIC PLACES	EXISTING SETTLEMENT POPULATIONS			STATUS UNKNOWN	SEASONAL CAMP SITE	ABANDONED	ANTIQUITY SITE
		25 - 299	300 - 999	1000 +				
TLINGIT (Contd)	Kuiu, on Kuiu Island, with a village of the same name in Port Beauclerc:							
	Kuiu, (island), 65 miles long, 56°35' n. 134°00' W. Var. Kou Island, Ostrov Kuyu. Tlingit Indian name reported in 1848 as "Ostrov Kuyu," or "Kuyu Island," on Russian Hydrog. Dept. Chart 1396. No descendants of this tribe in a reportable place allegedly exist today.						X	
	Sanya, about Cape Fox, with the following settlement:							
	Gash, near Cape Fox, on north side of Dixon Entrance at west side of Nakat Bay. (Var. Sanyakoan) Site of a former Tlingit Indian winter camp. Most of the people have now moved to Ketchikan (Hodge, 1907)						X	
	Yes Bay, cannery. Fishing village built around cannery. Established in 1886.						X	
	Loring, fishing village built around a cannery in 1885. Post office discontinued in 1936.						X	
	Sitka, on the west coasts of Baranof and Chichagof Islands with the following settlements:							
	Dehet, no reference given. Location unknown.						X	
	Keshkunuwu, "in SE Alaska." Former Tlingit Indian camp or settlement reported to be from Qeckunuwu, Hodge, 1907.						X	
	Kona, "on Baranof Island." Former Tlingit Indian camp or settlement reported by Swanton, Hodge, 1907.						X	
	Kushtahekdaan, no reference given. Location unknown.						X	
	Old Sitka, a summer camp on NW coast of Baranof Island, on Starrigavan Bay, 5.5 miles north of Sitka, Alex. Arch.; 57°07'50" N. 135°22'20" W. Var. Starri-gavan, Fort Archangel Gabriel, Mikhailovsk. Site of Russian fort and settlement founded in 1799 by A. A. Baranov, called "Mikhailovsk," because it was put under the patronage of Saint Michael Archangel. Fort destroyed by Tlingit Indians 1802; when Russian settlement reestablished in 1804 the fort, built in a new location, was called New Archangel. Old site known to Russians as "Starri-gavan", may be same place listed in 1880 census as "Old Sitka", population 73.						X	
	Sitka, on the west coast of Baronof Island, 95 miles SW of Juneau, site of the modern town. Tlingit village. Present place of Sitka at site of original village is principal place of these people.						X	
	Tlanak, "in the Sitka country." Former Tlingit village or camp reported in 1909 by Swanton.						X	
	Tluhashiyikan, as indicated by the native word straight opposite Mount Edgecombe. "In the Sitka country." Var. Luxacaiyikan. Former Tlingit village reported as "Luxacaiyikan" by Swanton.						X	
	Silver Bay, a summer camp located at Silver Bay, on west coast of Baranof Island. Former summer camp of the Sitka Indians reported in 1880 Census by Petroff. Site of Sitka pulp mill.	X						
	Stikine, on Stikine River and the neighboring coasts, with these settlements:							
	Kahltaatlan, a place called also Old Wrangell. Abandoned over 100 years ago.						X	
	Katchanaak, on the site of modern Wrangell which is now the principal place of the Stikine people.							
	Shakes' Village, on east coast of Etolin Island. Former Tlingit Indian summer camp of the head Stikine chief, Ceks. Reported in the 1880 Census as "Shakes' Village," population 38.						X	
	Taku - Sumdum, - their settlements were:							
	Sumdum, 40 miles north of Port Houghton on south side of Endicott arm. Site of large gold mine in 1898. Some mine buildings still standing. Indian family still living in area has Sumdum as last name. Summer fish camps at Dog Salmon stream.							
	Taku, called Taku Harbor, on Taku River and Inlet, Stevens Channel, and Gastineau Channel, with the following settlements: (site of large cannery until a few years ago. Few people still live there. Site of old Hudson's Bay Co. post) The principal place of the Taku-Sumdum people is now Douglas.	less						

NATIVE GROUP

HAIDA

Sources: Hodge,
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NATIVE GROUP	HISTORIC PLACES	EXISTING SETTLEMENT POPULATIONS			STATUS UNKNOWN	SEASONAL CAMP SITE	ABANDONED	ANTIQUITY SITE
		25 - 299	300 - 999	1000 +				
	Sikanasankian, on Taku Inlet, at mouth of Grindstone Creek, 10 miles SE of Juneau. Var. Tsek-nuk-sank-y. Fish camp.						X	
	Takokakaan, at the mouth of Taku River, as the name itself implies. Fish camp.						X	
	Tongass, at the mouth of Portland Canal, on the north side, with a village of the same name on Tongass Island, Alexander Archipelago:							
	Tongass, on east coast of Tongass Island. (Var. Fort Tomgas, Fort Tongas, Tont-a-quans, Tungasskon, Tungrass.) Former Tlingit Indian village or camp named for the island. Port of Entry in early days. Population recorded as 273 in 1880 and 255 in 1890. The Tongass people's present principal place is Saxman.						X	
	Yakutat, principally about Yakutat Bay but extending westward in later times to the mouth of Copper River, including these settlements:							
	Gutheni, north of Dry Bay. No reference given.						X	
	Hlahayik, on Yakutat Bay behind an island called Hlaha which gave it the name.						X	
	Yakutat, on Yakutat Bay, on west end of Monti Bay, 210 miles NW of Juneau. (Var. Yakdat Hlahayik, Yakitat, Yakudat.) Tlingit Indian village; the principal winter village of the Yakutats, a subtribe of the Tlingits, reported by Petroff in 1880 Census. Present place of Yakutat on original site.							
	Situk Village, one mile NE of Situk, on east bank of Situk River, 9 miles SE of Yakutat. Former Tlingit village reported as "Setuck" in 1891 by I.C. Russell. Reportedly founded about 1875 and abandoned about 1916.						X	
HAIDA	The Haida Indians emigrated from Queen Charlotte Island to the southern end of Prince of Wales Island and nearby small islands in the early 1700's. The villages they established were Howkan, Sukwan, Klinkwan, Kasaan, Kaigani. In 1911 these were abandoned (with the exception of New Kasaan) and everyone moved to Hydaburg where a school was built. With the exception of New Kasaan and Hydaburg these places were inhabited by the Tlingits before the Haidas drove them out. Haida settlements of the Kaigani tribe were:							
	Howkan (Var. Hawkan), west side of Long Island. At one time the largest village of the Haidas in Alaska. Now abandoned. Post office established 1882. Presbyterian mission established 1881. The people moved to Kaigani.						X	
	Sukkwan, southeast end of Sukwan Island, Tlevak Strait. The people moved to Kaigani.						X	
	Klinkwan, located on Prince of Wales Island at entrance to Klakas Inlet.						X	
	Kaigani, (Var. Koianglas) located in protected cove - south end of Dall Island. Was old trading site of the Tlingits. The Haidas consolidated their villages there (with the exception of Old Kasaan) before establishing Hydaburg.						X	
	Old Kasaan, located on the north shore of Skowl Arm, east side of Prince of Wales Island (Craig Map. One of the most interesting places in Southeast Alaska, it is located behind a beautiful gravel beach. There are small islets between it and the open part of Skowl Arm. The trees have grown up where the village was but the totem poles, not removed or stolen for museum use, still stand among them. From 1916 to 1955 it was a National Monument, now the U. S. Forest Service is charged with its care.						X	
	Kasaan, located on northern side of Kasaan Bay (Craig Map). Pacific American Fisheries established a cannery in the big cove there and the people from Old Kasaan moved there.	less						

Sources: Hodge, Frederick Webb (ed.). Part I and Part II: *Handbook of American Indians North of Mexico.* Washington: Government Printing Office, 1907.

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Oswalt, Wendell H. *Alaskan Eskimos.* San Francisco: Chandler Publishing Company, 1967.

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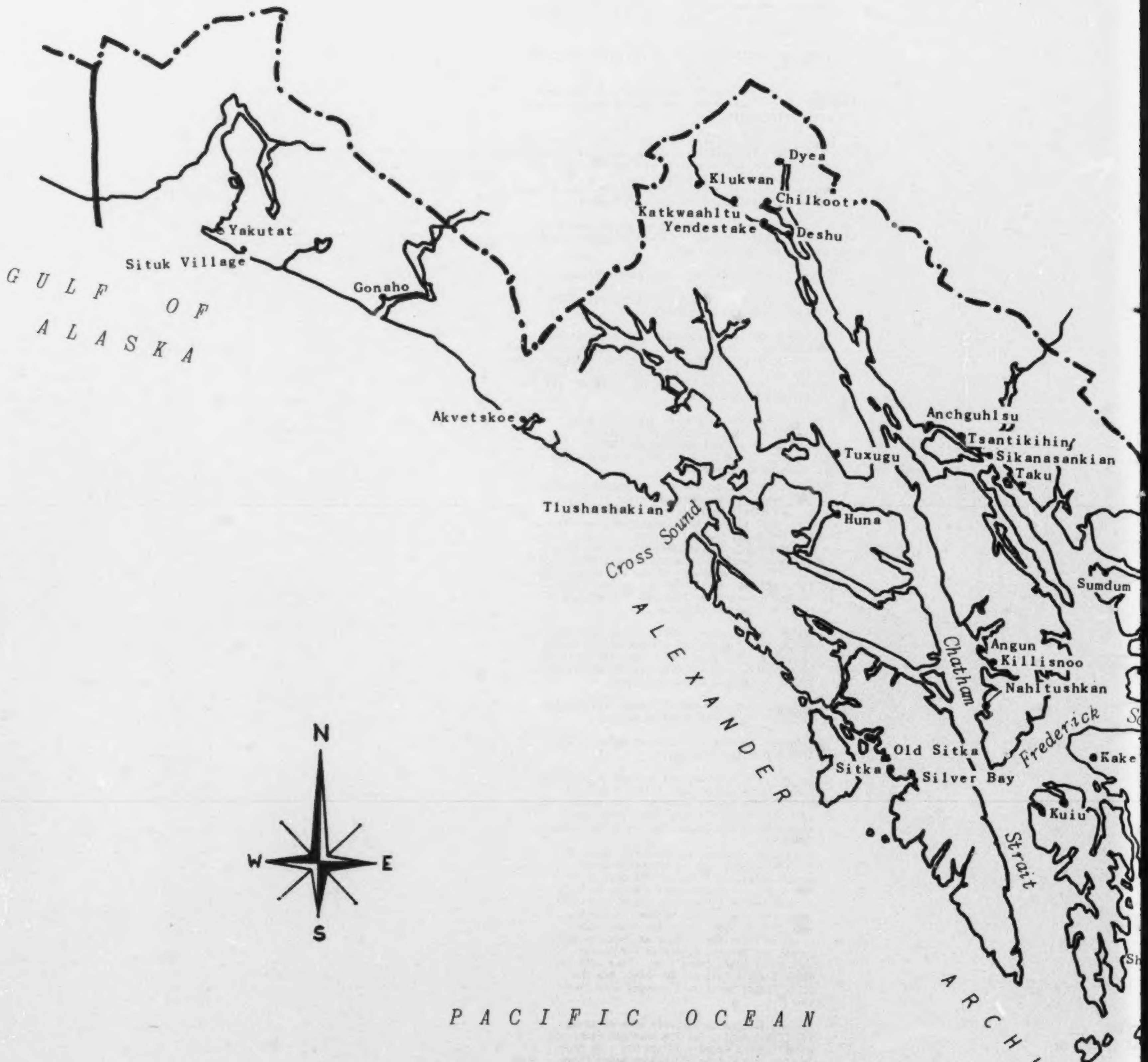
Compilation by David M. Hickok, Federal Field Committee for Development Planning in Alaska.


Dyea
Klukwan
Chilkoot
Katkwaahltu
Yendestake
Deshu
Yakutat
Situk Village
GULF OF ALASKA
Gonaho
Akvetskoe
Anchguhlsu
Tsantikihin
Sikanasankian
Taku
Tuxugu
Tlushashakian
Huna
Cross Sound
Sumdum
ALEXANDER
Chatham
Angun
Killisnoo
Nahltushkan
Frederick
Sc
Old Sitka
Kake
Sitka
Silver Bay
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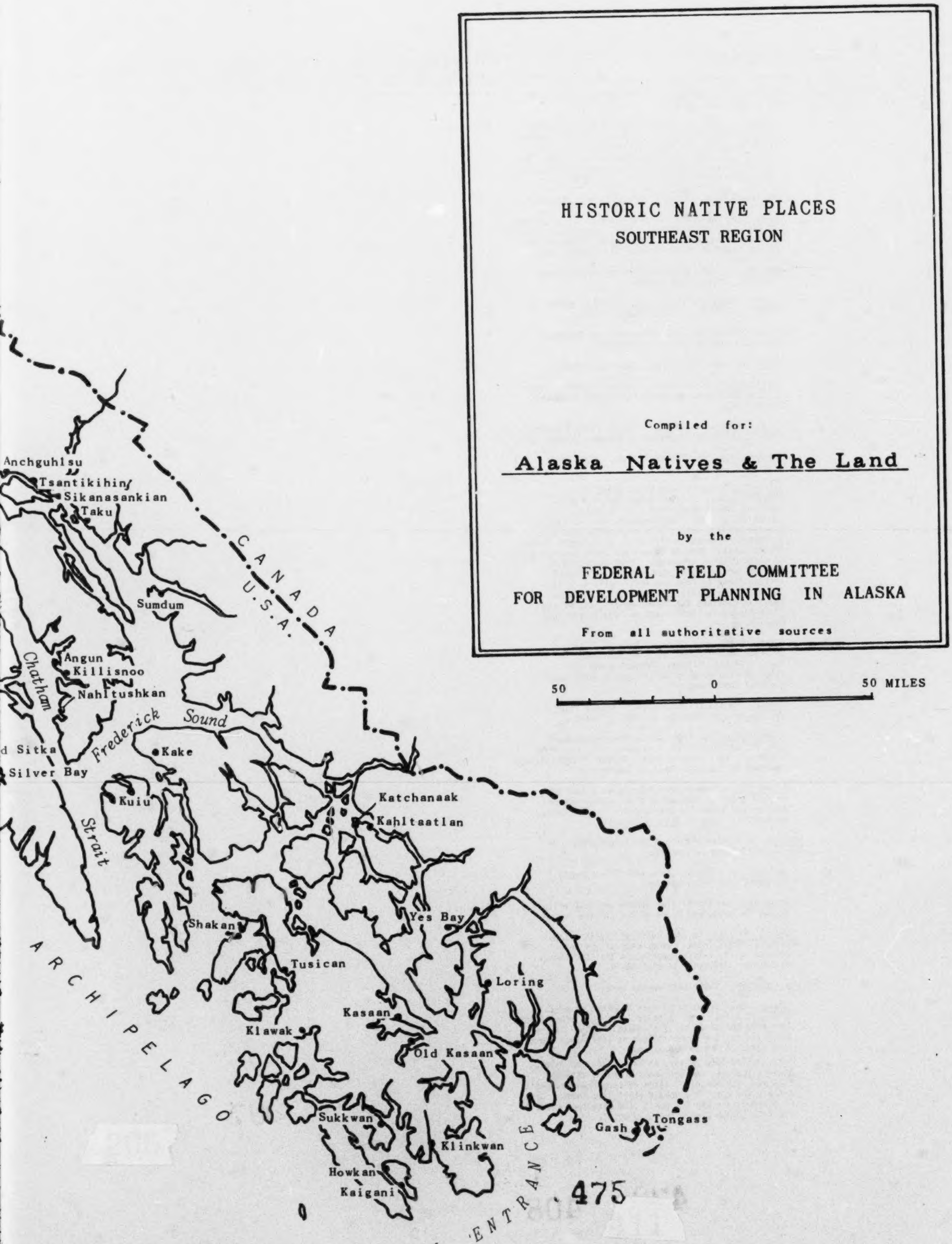
ARCHIPELAG
PACIFIC OCEAN

FIGURE III - 80



HISTORIC NATIVE PLACES
SOUTHEAST REGION

Compiled for:

Alaska Natives & The Land

by the

FEDERAL FIELD COMMITTEE
FOR DEVELOPMENT PLANNING IN ALASKA

From all authoritative sources

50
0
50 MILES
Anchguhlsu
Tsantikihin
Sikanasankian
Taku
CANADA
U.S.A.
Sumdum
Angun
Killisnoo
Nahltushkan
Chatham
Frederick Sound
d Sitka
Silver Bay
Kake
Kuiu
Strait
Katchanaak
Kahltaatlan
Yes Bay
Shakan
Tusican
Loring
ARCHIPELAGO
Kasaan
Klawak
Old Kasaan
Sukkwan
Gash
Tongass
Klinkwan
Howkan
Kaigani
DIXON ENTRANCE

FIGURE III - 80

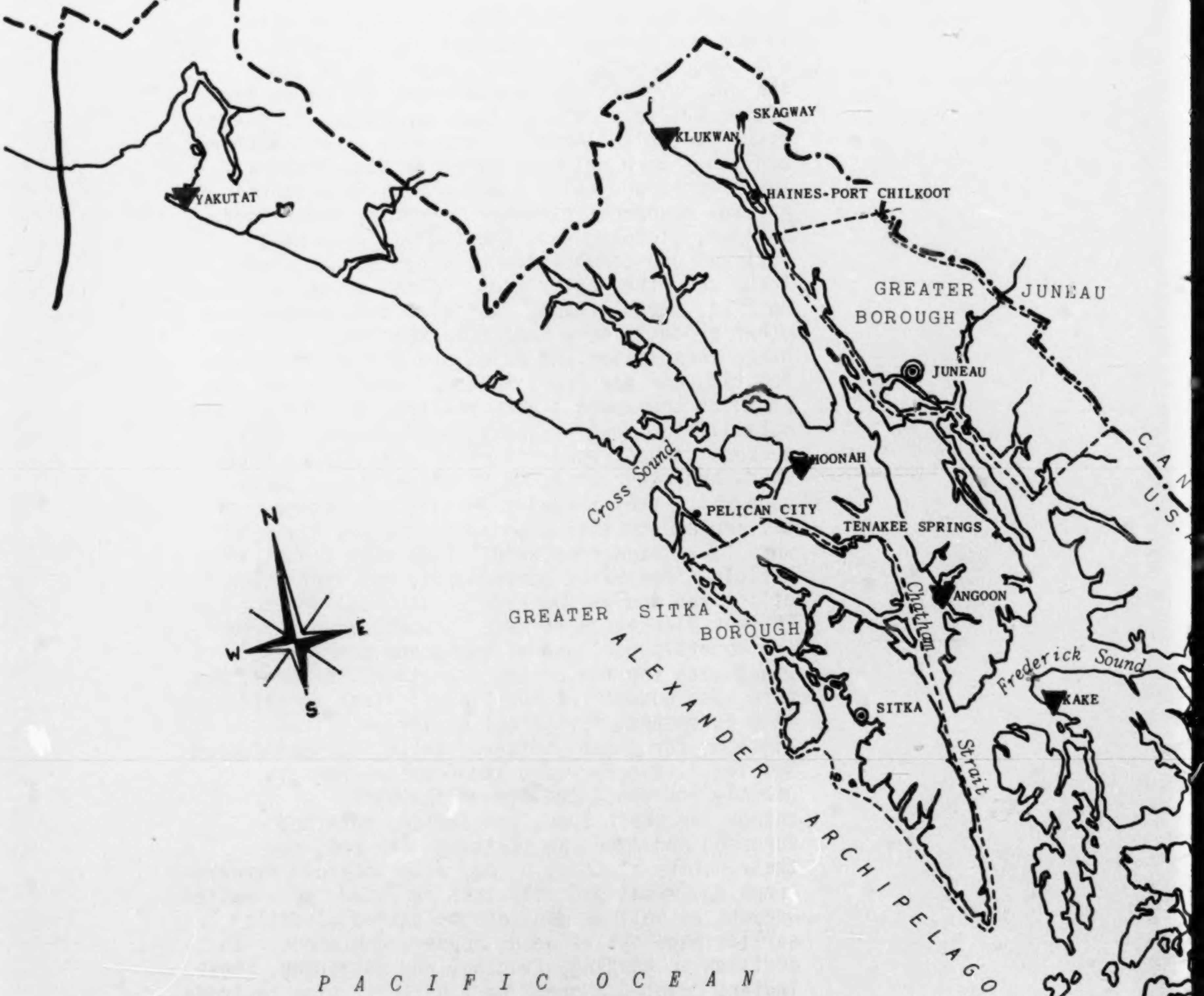
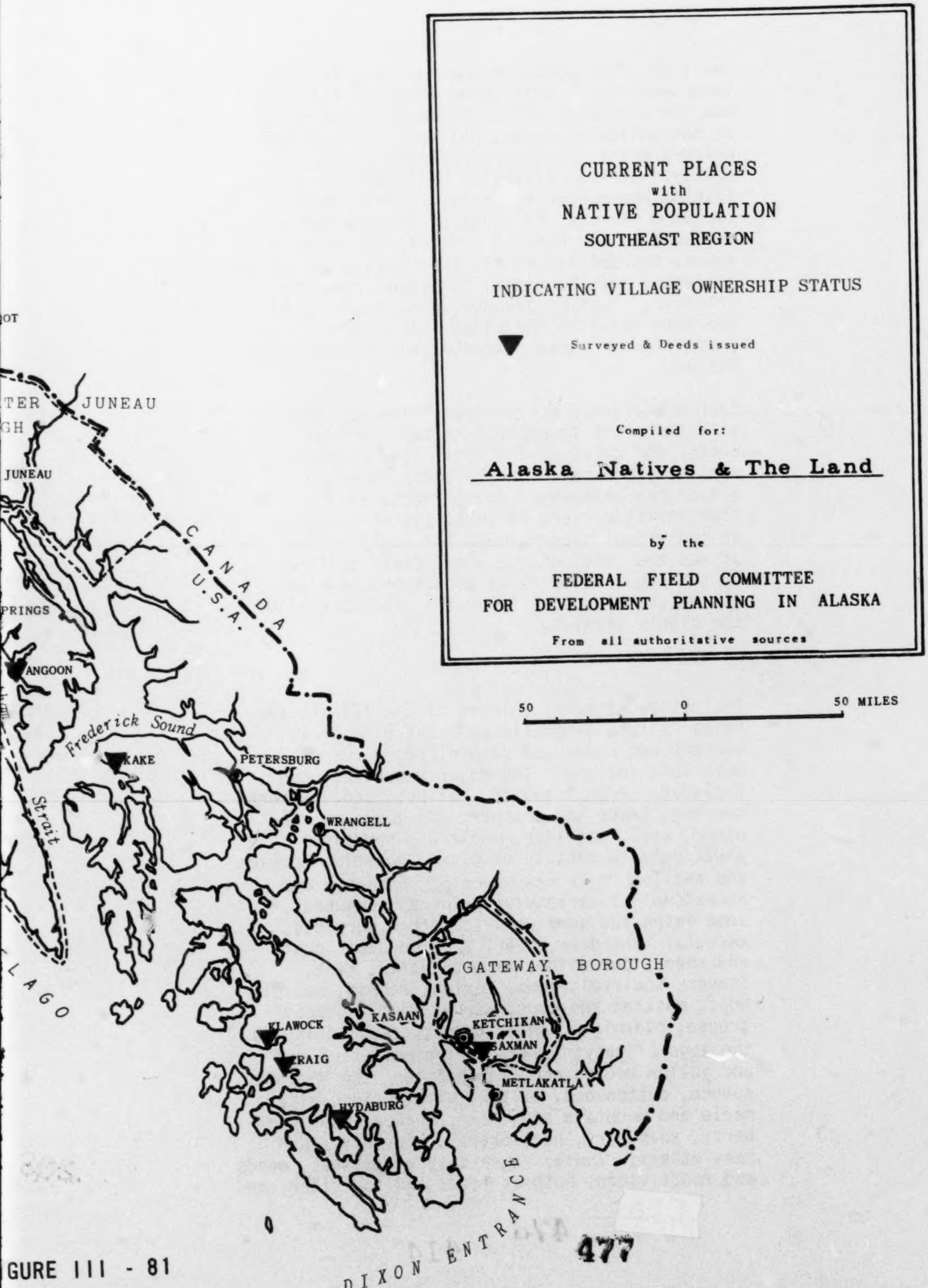

YAKUTAT
SKAGWAY
KLUKWAN
HAINES-PORT CHILKOOT
GREATER JUNEAU BOROUGH
JUNEAU
CAN
U.S.
HOONAH
Cross Sound
PELICAN CITY
TENAKEE SPRINGS
N
E
W
S
GREATER SITKA BOROUGH
ANGOON
Chatham Strait
ALEXANDER ARCHIPELAGO
Frederick Sound
KAKE
SITKA
PACIFIC OCEAN

FIGURE III - 81



CURRENT PLACES
with
NATIVE POPULATION
SOUTHEAST REGION

INDICATING VILLAGE OWNERSHIP STATUS

Compiled for:

Alaska Natives & The Land

by the

FEDERAL FIELD COMMITTEE
FOR DEVELOPMENT PLANNING IN ALASKA

From all authoritative sources

▼ Surveyed & Deeds issued
50
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JUNEAU
JUNEAU
CANADA
U.S.A.
PRINGS
ANGOON
Frederick Sound
KAKE
PETERSBURG
Strait
WRANGELL
GATEWAY BOROUGH
LAGO
KASAAN
KLAWOCK
KETCHIKAN
SAXMAN
CRAIG
METLAKATLA
HYDABURG
DIXON ENTRANCE

GURE III - 81

The local clan division in a village was the important social unit among these Indians. It was the entity in which control and authority, in the political sense, existed. It was the primary property claiming or owning group or entity. It held claims to well-defined hunting, fishing and gathering areas. Clan property included the fishing streams, the coastal waters and shores, the hunting grounds, the berrying areas, the sealing rocks, the house sites in the villages, and the rights to passes into the interior. Hunting grounds usually consisted of the watersheds of the streams or rivers. The protection of these resources was a local clan matter.

Each house group of the local clan was vested with the right to exploit certain defined clan areas, the chief of the local clan being generally responsible for the administration of all of the property. Thus, tracts of local clan territory were parceled out or assigned to individual house groups for exploitation. It was the chief of the local clan, assisted by the other house chief elders of the clan, all of whom formed a 'council', who controlled the clan's affairs.

....

The native material culture of the Tlingit and Haida Indians generally made use of a great variety and number of natural resources of both land and sea. The major resources used included: *Fish:* salmon, halibut, cod, olachen, herring, trout and snapper; *Sea mammals:* sea otter, seal, sea lion, whale and porpoise; *Shellfish:* a variety of clams, mussels, cockles and snails; *Other resources of the beach and shoreline:* a variety of kelps and seaweeds, some eaten and some used for other purposes; *Animals:* the deer, bear, fox, mountain goat and sheep, porcupine, marmot, otter, mink, beaver, squirrel, lynx, marten, rabbit, weasel, wolf, muskrat and coon; *Birds:* duck, geese, grouse, ptarmigan, gull, crane, crow, including the eggs of many; *Trees:* principally the red and yellow cedar, and, in addition, the hemlock, spruce, cottonwood, willow, birch, pine, alder, maple and mountain ash; *Berry bushes:* the cranberry, soapberry, huckleberry, blueberry, and many others; *Plants:* a variety of grasses, weeds and roots useful both as foods and for fiber, and of herbs and lichens useful as dyes and for medicinal and ceremonial purposes; *Minerals:* a variety of hard stones and copper.

Fish was the principal food resource, of which salmon was the most important, and fishing was the most important economic activity of these Indians. Generally, land hunting and other land activities were of much less importance in their economy. While these Indians were expert fishermen, they were not considered as good hunters. The Tlingit and Haida Indians made from these natural resources of their territory their food, shelter, clothing, and the tools, fabricated articles and commodities used by them in their trade and other activities. Fish, animal meats, berries, roots, clams, fish oil, many grasses and other products were made into food both for immediate consumption and dried and stored for winter feasting and for use in trade. Wood, in the use of which they were highly skilled, was the primary material for most of their manufactures. Their houses, canoes, boxes in which they stored their foods and other articles of value, totem poles upon which they carved their crests, and most of the implements they used in day to day living, were fabricated from wood. They made a host of articles from bark, particularly the inner bark of the red and yellow cedar. The well-known Chilkat blankets were made in part of wool from the mountain goat and of bark, and sometimes lined with the fur of the sea otter. Other fibers were also woven. At the time of first contact with Europeans, furs provided the principal clothing for these Indians. Later, as hereinabove set forth, the European and American markets greatly increased the demand for furs. In exchange for their furs, the Indians obtained European and American clothing that replaced their native clothing. They also obtained firearms, traps and metal utensils that replaced their native weapons as well as many of the native utensils earlier made out of wood, copper, and stone. In addition to hunting, fishing, and gathering, these Indians devoted a great part of their time to trade and to their important ceremonial feasts, called 'potlachs.' In addition to food products, the principal articles of trade, which were exchanged among the Indians themselves in great quantities, were furs, cedar logs and canoes, oil made from the olachen fish, bark, robes made of marmot skins, wool-bark blankets, carved utensils, shells, lichen for dyes, copper, and, after its introduction by white traders, the potato which the natives cultivated to some extent where they found suitable ground. At their winter ceremonial feasts or potlachs, these Indians consumed and gave gifts of great quantities of surplus food, blankets, furs, and other commodities. In this manner, the Tlingit and Haida Indians obtained from their territory an economy that, for a primitive people, was rich in the variety and extent of its material wealth.

Throughout the winter months of November through February, the Tlingit and Haida Indians generally lived in one or another of the permanent villages which composed their tribes. This was their real home and is sometimes referred to as the 'winter village' to distinguish it from the temporary summer camps. The massive ceremonial houses of the local clans were located in these villages. The village ordinarily stretched along some sheltered beach near some especially fruitful fishing, hunting and gathering area. However, most of the time throughout the spring, summer and fall the Indians were scattered, each family generally taking by canoe some customary route of its own whereby, together with the other occupants of its house, they would use the various fishing, hunting and gathering areas of the house, each area being used in the season of its special productivity. At these times, the winter village was all but deserted. During these spring, summer and fall rounds, the Indians lived mostly in crude shelters, the permanence of each depending upon the time spent in the particular area. Where a family customarily stayed for several weeks, it would build a camp of substantial planks. However, where the family customarily stopped for days only, its shelter would consist of little more than a heap of boughs or a skin tent. These summer shelters, like the permanent villages, were ordinarily located close to some fruitful region of some sheltered beach where the canoes of the Indians could be safely landed. In this manner, the habitations of the Tlingit and Haida Indians were scattered along the waterfronts of their territory, such as the ocean, the bays and inlets, up the rivers, wherever the waters were navigable by canoe, and also, to a lesser extent, on the shores of fresh water inland lakes where salmon spawned. ....

Among the Tlingit and Haida Indians, the annual round differed somewhat between the various tribes. The riverine Tlingit tribes along the mainland coast, such as the Chilkat-Chilkoot tribe, were able to secure great quantities of their staple foods for long seasons close to their permanent villages. They spent longer periods of the year in their permanent villages than did the island tribes. On the other hand, the coastal tribes generally did more inland hunting, and more overland traveling than did the island tribes. The mountain goat and marmot were obtained along the mountain slopes of the coastal range on the mainland. In addition, the mainland Indians had access to various other animals that were not found on the islands, such as wolf and grizzly bear, as well as the larger land mammals, such as elk and moose. The coastal tribes jealously guarded their trade monopoly with their Athabaskan neighbors to the east, and for this purpose, through well-defined trails and passes, traveled inland long distances beyond the coastal range. In general, however, the Tlingit and Haida Indians scattered out from their winter villages early in March. On the islands, this was the time for halibut and cod fishing and gathering herring roe, and on the mainland, for trout fishing. Shellfish were then at their best and were gathered in great quantities, dried, smoked and packed in airtight boxes. The coastal tribes traded dried meats and hides for these island shellfish, and engaged in trapping and hunting. In particular, this was the month for hunting bears, sea otter and seal. Deep sea and trout fishing continued in April, at which time the women gathered seaweeds of various kinds. The hunters continued trapping on the mainland, but on the islands, since the hair of the fur-bearing animals became thin with the approaching warm weather, the hunters sought other animals, such as rabbits and porcupines. On the mainland, marmots were dug out of their holes on the mountainsides. Ducks were hunted on the water and grouse on the hillsides. In May, the search for green plant foods began.

Many varieties of roots were collected by the women, boiled, dried and packed away. In this month, immense quantities of fish oil were prepared, this being the season for catching the olachen, a small extremely oily fish spawned in the river mouths. The oil from this fish was eaten with most foods and was used for preserving berries, roots and herbs. The end of May was a time for trading expeditions, the tribes at the river mouths exchanging their oil, the coastal tribes their blankets and marmot robes, the island tribes their cod and halibut, and the Haida their large canoes, for the commodities of other tribes. In June, berries began to ripen and many varieties of berries and roots, herbs, hemlock bark, and birds' eggs were gathered by the women for immediate consumption, for storage, and for trade. This was also a time for feasts and building ceremonial houses, using timbers that had been prepared during the winter. Trading continued throughout June, and long voyages were undertaken. In late June or July, the first salmon runs began, and by August the storage of large quantities of food became the principal activity. Women gathered berries and men hunted for meat, which was dried and stored. In September, most of the Indians concentrated upon salmon, the men fishing, the women drying, smoking, and storing. In October, the emphasis shifted to hunting such animals as the deer and the mountain goat. In this month, the coastal tribes made their last trading trips inland before the winter closed the passes. Toward the end of October, plans were laid for the ceremonial potlachs that took place in November and December. In winter, the days were short, the weather wet, and the nights suited to the great feasts. During these months, the tribes lived largely on the supplies gathered in other months. However, trapping and some hunting were carried on throughout the winter months, the Indians tending traplines that generally extended several miles up a stream or along some waterfront. In November and December most of the productive activities took place in the winter villages. The women prepared fibers for weaving and the men, wood, stone and shell for toolmaking. The men also searched the forests for trees for canoes and house timbers. By January, most ceremonial feasts were past. The women made garments and wove baskets and the men made canvas, totem poles, ceremonial articles, and tools. In February, preparations started for the new seasons' rounds of fishing, hunting and gathering. Canoes, fishing and hunting equipment were repaired. The men made short fishing trips. Soon thereafter each family set out, as the year before, to fish, hunt, and gather in the various areas allotted to it by the customs of its house and local clan.

In the last decades of the 18th century and through the first half of the 19th century, trade for furs was the principal attraction that drew Europeans and Americans to the northwest coast of America. In 1778 Captain Cook's expedition left Tlingit and Haida territory with a great quantity of furs obtained in trade with the Indians. Later this expedition landed at Macao, China. Here the crew found that its furs, especially the sea otter furs, were highly prized. Thereafter, the opportunity thus opened for a profitable trade became widely known.

Over the years that followed, three means for exploiting the fur trade developed. First, sailing ships, largely from England and America, went through the channels, bays and inlets of Tlingit-Haida territory exchanging European and American wares for cargoes of furs. Second, the Russian American Company, under the leadership of Baranof, established a number of settlements in Tlingit and Haida territory. The principal settlement was established at Sitka in 1799. A few years later, Nikolayevsk was founded at Yakutat Bay and Simeyonosk on the Cape of St. Elias, and again some years later a post was established at Wrangell. Each of these posts was set up primarily to gather furs through trade with the Tlingit Indians. Third, beginning in the third decade of the 19th century, the Hudson's Bay Company, moving north and west from British Columbia, attempted to establish trading posts along the coastal strip in Tlingit and Haida territory. In 1839, the Company secured from the Russians a right to establish its trading posts in this area by a lease made with the Russian American Company. However, by this time the supply of sea otter furs had been considerably depleted, the Chinese market had been depressed, and the long voyages of the sailing ships were no longer profitable. Consequently, the fur trade with the Tlingit and Haida Indians that had earlier been done in largest measure with sailing ships shifted to the trading posts of the Hudson's Bay Company and the Russian American Company.

The fur trade changed and enriched the material culture of the Tlingit and Haida Indians. By this trade the Indians were supplied with firearms and steel traps to the point where former weapons and trapping methods were largely abandoned. Flour, molasses, rice, tobacco, whiskey, knives, and shirts became staples of the new material culture. Trapping and hunting became a major economic activity and a principal avenue to the material wealth important to the power and prestige of the Tlingit and Haida clans, as hereinafter more particularly described. This fur trade also tended to concentrate the Indians into larger villages and sometimes to reduce the number of these villages to one for each tribe, also as that term is hereinafter defined. However, before 1850, the intensive trapping and hunting of the Tlingit and Haida Indians had begun to reduce the total annual product of furs from their territory.

The fur trade hereinabove described did not impinge in any material respect upon the Tlingit and Haida Indians' concept of their proprietorship over their lands and waters. The Europeans and Americans, with only insignificant exceptions, did not send hunting or trapping expeditions into Tlingit-Haida territory. They did not come into the territory with intent to cultivate the land or even with intent to make permanent settlements beyond the minimal needs of trading posts. Even the few posts that were established by the Russians and British were secured from the Indians either by conquest, followed by a grudging consent, or by an initial purchase or trade in accordance with the Indian concept of their right to their land. The incentive that the fur trade gave these Indians to hunt and trap succeeded in securing to the white man the fur product of the area without doing violence to the Indians' concept of proprietorship over the territory.[151]

The Indians preserved with little change their original way of life throughout the period of Russian occupation. Following the purchase of Alaska by the United States, livelihood patterns began to change, both voluntarily and as a necessary adjustment to the developments introduced by ever increasing numbers of Americans. The communal houses were abandoned in favor of single family dwellings as early as the 1880's. The establishment of commercial fisheries dispossessed some families and groups of traditional fishing sites and disrupted the traditional annual regimen of resource harvest.

The rapidity with which resource development advanced is indicated by Governor Knapp who, in his annual report dated October 1, 1889, reported that eleven sawmills were in operation in southeast Alaska and that at least 36 salmon canneries were in operation, 19 of these canneries having been built and put into operation since the last season. The report of the 1890 census stated that fishing stations in southeast Alaska were located at nearly every point that afforded a supply of fish sufficient to warrant the investments of capital.[152]

Gold mining developed in a few areas and caused serious local disturbance to the Indians, particularly in the Juneau-Douglas area, although its influence was not widespread as was the case with commercial fisheries.

Initially the exploitation of natural resources by Americans did not benefit the Indians. Chinese workers were brought in to perform cannery labor. Fishing required special gear investments beyond the means of the Indians, and whites operated the sawmills and gold mines. Gradually, however, the local natives began to participate more and more in these industries, especially in the commercial fisheries. During the present century, commercial fishing has become the economic base of nearly all the Indian communities of Southeast Alaska. With government assistance, these people have acquired fishing vessels of the finest type. They participate in cannery operations and are involved in successful competition with Caucasians at all levels of industry.

Subsistence utilization of fish and game resources remains important to the Tlingit and Haida, particularly in outlying villages, but it does not differ greatly from the uses of other races who reside in the same localities. The trapping of fur animals is still practiced, often as an enjoyable endeavor rather than a profitable enterprise. Basically the Indians now live with a money economy, little if any different from other Americans, although they are not as well represented at the professional and business levels. They find employment, side by side with Caucasians, in virtually all aspects of the region's industry, and actually dominate the commercial salmon fishery in several localities.

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[151] *Ibid.*
[152] *Ibid.*

NATURAL RESOUR

CHAPTER IV

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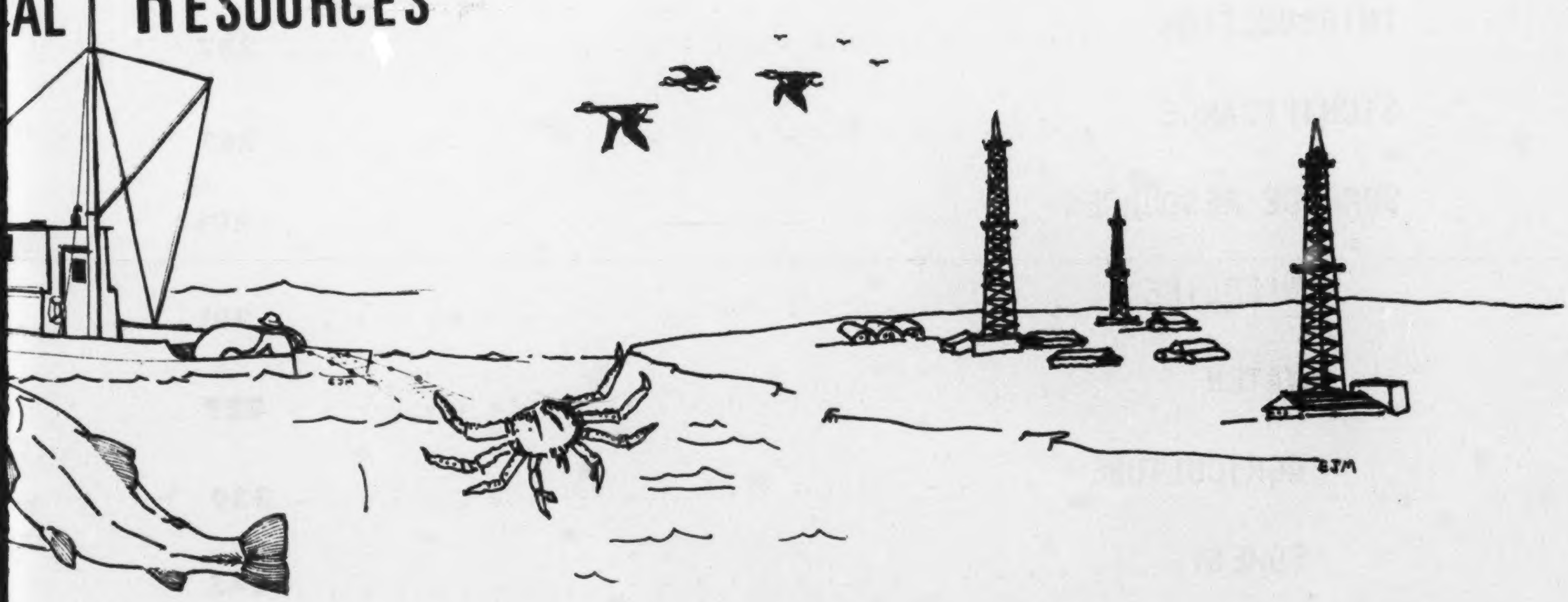

David M. Hickok

CHAPTER IV

TABLE OF CONTE

INTRODUCTION 287

SIGNIFICANCE 287

SURFACE RESOURCES 291

- WILDLIFE 291
- WATER 327
- AGRICULTURE 339
- FOREST 345
- FISHERY 351
- RECREATION 359

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CHAPTER IV

TABLE OF CONTENTS

. . . 287
. . . 287
. . . 291
. . . 291
. . . 327
. . . 339
. . . 345
. . . 351
. . . 359

SUBSURFACE RESOURCES 377
LOCATABLE MINERAL RESOURCES 377
LEASABLE MINERAL RESOURCES 391

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NATURAL RESOURCES

A legislative solution for the Alaska Native land claims requires a large frame of reference for decision making--the occurrence and uses of natural resources, present and potential, are of basic importance.

It is essential, therefore, that this report contain factual material on Alaska's natural resource endowment so that the land "rights" and needs of Alaska's Native citizens may be put in perspective with other national and state resource requirements.

Where possible, background material on Alaska's resources is given in a regional context which can be related to particular aspects of Native ethnography, Native regional organizations and to the availability of land for particular resource pursuits.

The chapter is divided into two main parts: surface resources and subsurface resources.

The significance of natural resources in Alaska, with regard to Native claims issues, range along a spectrum of importance dependent upon viewpoint. At one end may be grouped the surface resources, with wildlife and fisheries being particularly significant to continued Native subsistence patterns, at the other the subsurface mineral and fossil fuel resources provide the potential for economic expansion and capital growth important to all citizens of the state.

The wildlife and fishery resources of the state are generally well known and possess unique values of statewide and national significance--and most importantly the wildlife and fisheries resources represent life itself for many Alaskan Natives. Facts about the mineral, oil and gas resources of Alaska are less known but offer potentials for tremendous economic wealth returns to private capital and landholders. Between these ranges, with varying regional occurrence and importance, the other natural resources of the state--the water, the forests, agricultural and recreational endowments of this land--each provide their own significance to the issues at hand.

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TURAL RESOURCES

Each resource sector presents some facet of specific significance pertinent to decision-making on the Native land claims issue. The text to follow, describing Alaska's natural resources, does not attempt to directly enumerate these matters of significant importance--rather its purpose is to briefly present known resource facts.

Before presenting these facts, however, it is desirable to state some of the important resource issues and conflicts pertinent to the Native claim question. From these, the recitation of facts concerning resource occurrence can be put into perspective with land tenure problems and any proposed adjustments or solutions.

Wildlife Resources

1. Many of Alaska's wildlife resources are of national significance--the waterfowl produced on Alaska nesting grounds provide migratory flights and wintering birds in the Pacific flyway; the Kodiak brown bear, Kenai moose, Dall sheep, muskox, caribou and several species of marine mammals have their only United States occurrence in Alaska and as representative species of North American wildlife deserve and receive national as well as state management attention; the populations of several species of wildlife in Alaska are also categorized by national and world biological authorities as rare or endangered.

   The significance of these matters lies in the question: to what extent and in what manner are the lands and habitats of wildlife species of unique national significance to be reserved and managed?

2. A great deal of emphasis in this report is given to the dependency, in whole or in part, of many Alaska Native populations upon the biotic resource for subsistence harvest in order to sustain life. Wildlife is of course a product of particular land and water environments. Two points are important:

a. Legislative jurisdiction[1] for wildlife resources, except migratory birds, is vested in the State of Alaska.

b. Proprietary jurisdiction of land is vested, at this point in time, primarily in the federal government. Whether land tenure, however, is federal, state or private, such jurisdiction includes the right for the proprietor to prescribe who, where and in what manner persons may enter, travel across and conduct activities upon land within their jurisdiction.

These jurisdictional matters have great significance to the Native claim question. There is increasing conflict between the sport or commercial harvest of wildlife resources and the subsistence harvest of these same resources by Native people.

The question of whether or not the state is inclined or able to assure appropriate legislative balance in the taking of wildlife resources for these divergent and often conflicting ends has great bearing upon the amount and location of lands which may be vested in Native ownership as part of the settlement of their claims. Without assurance by the state of equitable treatment in the legislative jurisdiction of wildlife resources for Native subsistence purposes, the Congress is faced with two questions: should it vest proprietary jurisdiction of lands supporting the habitats of these resources in Native groups at a level of magnitude far beyond any statements yet made by either the Department of the Interior, State of Alaska or Native spokesmen; and, since the Statehood Act constituted in effect a "taking" of wildlife resources from Native "use", should this taking be compensated?

Water Resources

The general development and allocation of Alaska water resources is essential to the enhancement of economic growth and community welfare in Alaska. Furthermore, Alaska is a region of water surplus and must be considered as a future potential continental water source for water deficient areas in the western United States and Canada.

Significant water resource needs pertinent to Native land claim questions arise in the reservation and allocation of water source, storage and transport areas and systems for community supply, distribution and sanitation, flood control, fishery and wildlife habitats, navigation, power and recreation.

In this regard, the largest potential or possible use for Alaska water resources is conceivable hydroelectric power development opportunity. Importantly, however, this source of power, with but a few site exceptions, does not exhibit favorable cost-benefit ratios at the present time or in the foreseeable future, and particularly hydro-power is deficient when compared with available alternative thermal power sources.

An important point of conflict with the Native claims issue is the federal withdrawal of many hydroelectric power sites and reservoir areas in regions claimed by Native groups and which prevent the transfer of land ownership to village groups or individuals.

A second important factor pertinent to water resource utilization and the Native claim issue is the state's ownership of lands beneath navigable waters (granted by the Statehood Act except within existing federal withdrawals of that time). This has meaning to the Native claim issue. Although many Alaska aboriginal societies recognized a "user right" to exist with an individual or family for a net, wier or other fish catching place on a river or lake, no such "right" now exists on navigable waters because the Statehood Act extinguished any personal proprietorship and vested general ownership of lands beneath navigable waters in the state.

A third important factor is the need to provide watershed protection to water source supplies for Alaska's cities, towns and villages. Depending upon location and physiography, community watersheds may be of considerable size in order to provide for safe and adequate supplies in the future.

Forest Resources

The significant relationships between forest resources and the Native claim issue are divisible between the coastal zone forests of Alaska--nearly all administered by the U. S. Forest Service within the Chugach and Tongass National Forests and the interior zone forests--nearly all on public domain administered by the Bureau of Land Management.[2]

The important question concerning the U. S. Forest Service lands is whether or not the allocation of such lands from the National Forests to Native claimants for village sites or hunting and fishing camps would unduly affect the economic structure of the forest industry dependent upon Forest Service resource commitments and/or be detrimental to the public purpose managerial responsibilities of the Forest Service

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[1] The authority of government to prescribe who may harvest the common property resource of fish and wildlife and to regulate the extent, time and manner of such taking.

[2] Ninety-two percent of Alaska's coastal forest zone is in the National Forests; of state selected lands only 262,445 acres are classified as timberlands (O. Kieth Hutchinson, *Alaska's Forest Resources*, U. S. Department of Agriculture, Forest Service, Institute of Northern Forestry, Juneau, Alaska, 1967).

not only for timber harvest, but also for watershed protection, wildlife management and recreational purposes. Even though the Court of Claims has made a judgement as to the taking of lands from the Tlingit and Haida Indians of Southeastern Alaska--the Tongass National Forest, Glacier Bay National Monument and Annette Island Indian Reservation--the need for determining the land settlement for the rest of Alaska also poses questions of land settlement equity which the Congress might wish to entertain by considering the granting of village and hunting and fishing sites to Southeastern Natives within the National Forests.

Relative to interior forests the resource significance involved is essentially one common to land and vegetative management generally--namely the importance of this resource to public multiple purpose management versus allocation to private uses. Alaska's interior forests cover about 32 percent of the total land area and of this 32 percent, 21 percent of the forest is commercial.

Agricultural Resources

Almost all available suitable cropland in Alaska has been selected by the state or patented to private interests.

The agricultural resource significant to the Native claim issue is grazing land--particularly on the Alaska Peninsula, Kodiak Island, the Aleutian Islands and the Seward Peninsula. With improved transportation and changing economic feasibility, livestock production (cattle and sheep) is a potential expandable use for the grasslands of western Alaska. Who controls and manages the land for such potential use--Native or white entrepreneur--is, however, only one conflict. Another is between wildlife and domestic livestock and the question here is which resource use of the land is most greatly in the national conservation interest as well as the provider of the greatest economic return to the state. At the present time and in the foreseeable future the balance favors wildlife use as the more important economic asset.

On the Seward Peninsula and on Nunivak Island reindeer husbandry is practiced by Native peoples. Here two issues significant to land claims related questions arise:

... Should the recent historic (since the early 1900's) use of the Seward Peninsula by Native reindeer herders be recognized as "use and occupancy" and land title transferred for such grazing use to individual Native herders or to corporate groups representing these individuals?

> ... Nunivak Island is a place that is at once a National Wildlife Refuge for the muskox and migratory birds by federal withdrawal, and the location of a government-owned reindeer herd maintained for the benefit of the Nunavakmiut by the Bureau of Indian Affairs. While potential conflict between national and Native objectives is not irreconcilable, the question does arise as to primacy. To which of two objectives for Nunivak, Native economic need or national conservation purpose, should primary emphasis be granted?

Fishery Resources

Two points of significance arise from the fishery resource sector that are pertinent to the Native claim issue. These parallel those made for wildlife resources. The Native "use" of the fishery resource was "taken" when legislative jurisdiction over fish and wildlife resource passed to the state by virtue of the Statehood Act.

The Native people as a group have no voice in the management of fishery resources in Alaska other than through representation in the legislature. Whether or not the federal government should compensate the Native for loss of this resource--this taking--is a basic question.

The fishery resource is one in which the Native can compete as a wage earner with moderate outlays of capital. Here is a resource with which he is familiar. Here is a resource that is renewable. But, "Can the Native individual or groups compete as an entrepreneur in the fishery industry in potential conflict with developed capital interests and legislative lobbies?" This is a question related to the land claims issue in many parts of the state which the Congress might well explore to obtain the definitive positions of the state and commercial interests both in Alaska and without.

Recreation Resources

The recreation resources of Alaska may be one of the state's most valuable assets to the Native in the years ahead.

The significance of the resource at issue in the context of Native claims resolution is the relative merit of vesting title to those potential recreational land resources which are of National significance in Native groups for their proprietary discretion versus retention in public ownership for all peoples in future generations to use and enjoy.

Mineral, Gas and Oil Resources

The potential wealth of Alaska mineral and oil and gas resources is not known. Much of the state's geology is imperfectly understood, many regions of the state are virtually unexplored. Since this is true, it would be impossible to pattern a rational distribution of land based upon mineral wealth or even considering such as a factor. Nevertheless, sufficient knowledge exists to say that the wealth of subsurface resources available to the Nation from Alaska (given favorable future economic recovery factors) can only be reckoned in many billions of dollars.

The salient points with regard to mineral resources and Native claims are: Since aboriginal "use and occupancy" of the land was associated only with surface resources, is there a "right" belonging to the Alaska Natives connected with the subsurface resources of the land?

... If subsurface resource rights were granted to Native groups, would the management of the resource be in the best interest of the Nation and the state? Would orderly development, appropriate private capital expenditure, and the practice of conservation principles be furthered?

... Whether or not there is any "right" of Native groups to subsurface mineral resources, are the revenues derived from associated leases and royalties an appropriate source of funds to ameliorate Native social and economic conditions of need?

Definition of Terms

In the following descriptive text there is no need to define words or phrases used in the section on surface resources. In the section on subsurface resources, however, several phrases may be new to the reader and are, therefore, defined here.

Locatable and Leasable Resources

The "locatable mineral" resources are defined as those minerals or mineral substances not designated by the Congress as leasable, i.e., coal, potash, petroleum, natural gas, phosphate, sodium minerals and oil shale. The "locatable minerals" thus are the metals, construction materials, and most nonmetallic products except fossil fuels and salines. "Leasable minerals" are those designed above. "Locatable minerals" are leasable, in a general sense, if they fall on private, state or federally acquired lands.

This report emphasized the "locatable" and "leasable" substances that have or can be expected to play an important role in the Alaskan economy or in the national scene. For "locatable minerals" they are arranged under three main headings: (1) Metallic commodities; (2) Radioactive fuels; and (3) Nonmetallic commodities. For "leasable minerals" discussion is captioned as designed above.

Resources and Reserves

In this report the term "resources" applies to materials in the ground that are known to be minable now, plus material likely to be minable in the future. Reserves, on the other hand, are materials that may be only partly explored, but whose quantity may be estimated and are considered to be economically exploitable at the time of the estimate. "Ore" is defined as mineral material that can be mined at a profit.

Mineral resources are fixed in quantity and quality, and are not renewable. Reserves, on the other hand, fluctuate in amount. They are a continually changing quantity, the estimates of which are dependent upon economic and technologic changes as well as on exploration. Thus, a low reserve figure does not necessarily mean that a mineral deposit is near exhaustion. It may mean that a depressed market has lowered the value of the mineral commodity to the point where it no longer can be considered a reserve.

Within a framework of these definitions, it will be seen that Alaska's "reserves" of metals are small indeed and restricted to relatively few commodities. Her metallic mineral resources, on the other hand, are large and varied.

SURFACE RESOURCES

WILDLIFE

Alaska's wildlife resources are large and varied. Historically, these resources were the only means of subsistence for indigenous populations of Aleuts, Eskimos, and Indians. After the discovery of Alaska, subsistence use of wildlife continued to play an important role in the development of the state, although the more spectacular trade in fur animals, particularly the sea otter and fur seal is more widely recognized. In some parts of the state changing cultural patterns are reducing the direct dependence of people on wildlife, but in many regions of the state this resource is still the major economic base. In other regions, however, or for certain species, hunting for sport has assumed an increasingly important function.

Wildlife populations are not uniformly abundant, and Alaska is not "teeming" with game. Large areas are nearly devoid of wildlife, and other areas contain significant populations only seasonally. This uneven distribution of animals and the variation in species inhabiting different regions had a pronounced effect on the distribution, size, and culture of aboriginal populations, and will continue to affect utilization patterns, even though wildlife harvest becomes more orientated for sport instead of direct subsistence.

This report summarizes current information on the distribution, abundance, and economic importance of major species. For this purpose it was necessary to draw extensively on the unpublished reports of the Alaska Department of Fish and Game and the Bureau of Sport Fisheries and Wildlife. Other source publications are listed in the bibliography.

Assignment of monetary values to wildlife is a difficult problem. In this analysis, only those values related to consumptive use of the resource as indicated in Figure IV - 1 have been included. This solution is quite limiting because it ignores the considerable economic benefits that consumptive use generates in service and other industries. Of perhaps more importance, this means of evaluation omits the economic benefits derived through non-consumptive use of the wildlife resource by photographers, tourists, and other visitors to Alaska. Wildlife is a primary attraction to such visitors, and although not done here, should be considered in evaluating the economic benefits of this resource.

The future proprietary interest in Alaska lands is a matter of great importance to the future of the Alaska wildlife resource. The contribution that the wildlife resource can make to the fulfillment of three sets of objectives: Native, state and national, depends directly upon the means used and ends achieved in land ownership, tenure and management practice.

Dependent upon means employed and ends achieved, the interests of the native people, the state and the nation may be either compatible or in conflict.

Therefore, the reader in reviewing this assessment should try to seek compatibility and balance between varying regional requirements, such as:

... The dependency of some Alaska Native populations upon a wildlife subsistence supply in order to sustain life;

... The economic requirements of the state and its citizenry derivable from the wildlife resource (including some dependence upon subsistence and commercial use, but primarily upon the aggregate economics of the sport and recreational harvest);

... National goals and objectives for the preservation and wise use of wildlife resources and habitats of unique national value; and

... Combinations of these factors.

FIGURE IV - 1

EVALUATION STANDARDS FOR WILDLIFE BENEFITS[a]

	Value		
Species	Meat, Skins, Etc.[b]	Recreation	Total
BIG GAME			
Deer	$ 50	$ 50	$ 100
Moose	250	100	350
Caribou	50	60	110
Elk	200	100	300
Bison	300	100	400
Dall Sheep			500
Mountain Goat			300
Black Bear	50	50	100
Brown Bear			1,500
Grizzly Bear			500
Polar Bear			2,000
MARINE MAMMALS			
Seals	25	25	50
Walrus	200	1,000	1,200

FURBEARERS valued at current market value of pelts.

WATERFOWL recreation value estimated at $4/day for ducks and $6/day for geese on the basis of an average daily bag of 1.3 ducks and/or geese, and a 20% harvest of the fall population. This is equivalent to a value of $3.10 per duck, and $4.60 per goose, bagged.

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[a] Evaluations are based on Supplement No. 1: *Evaluation Standards for Primary Outdoor Recreation,* Ad Hoc Water Resources Council, Washington, D. C., which was signed by the Secretaries of Agriculture, Interior, Health and Welfare, and the Army, on June 4, 1964. Values for big game used primarily for sport hunting are assigned on the basis of trophy and guiding fees that hunters normally pay. No values are assigned for non-consumptive uses such as photography, wildlife viewing, etc., which are a primary value to tourism in Alaska, and an important source of revenue to support industries. Such recreation accounts for most visits to Wildlife Refuges in the United States; its value may be much more significant than those we have cited.

[b] Meat is valued at 50¢/lb. for deer, caribou, moose, elk and bison; 25¢/lb. for seals; and 10¢/lb. for walrus. Average weights are estimated at 500 lbs. for moose, 400 for elk, 600 for bison, and 100 lbs. for deer and caribou, black bear, and seals.

Source: U. S. Department of the Interior, Bureau of Sport Fisheries and Wildlife, Anchorage, Alaska.

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Polar Bear
Photo by Jim Brooks
Bureau of Sport Fisheries & Wildlife

ARCTIC REGION

The fauna of the arctic region is characterized by relatively few highly adapted resident species augmented periodically by many migratory species. The most prominent and important land mammal is the barren ground caribou. Moose have become established in the larger arctic slope drainages during recent decades, but while locally common, they are generally not abundant. A sparse but widely distributed grizzly bear population occupies the entire arctic slope. Dall sheep occur throughout the mountainous areas. Muskox were once present in this region but were extirpated in the last century. The wolf, wolverine, white and red fox, marmot and ground squirrel are common. Mink, land otter, marten and lynx are present but are usually too scarce to be of importance to humans.

The ptarmigan is the most important resident bird. Many species of waterfowl are present, often in substantial numbers during the summer season.

The marine mammal resources have traditionally been of greatest importance to the human population of the arctic. Bowhead whales and belugas are common except during the winter season. Humpback, California grey, finback, and killer whales are occasional visitors to the region. The polar bear, walrus, and bearded, ringed, and spotted seals are important and fairly abundant species.

The original Eskimo culture of this region, as elsewhere, was highly specialized and adapted to an almost complete dependence on marine mammals. Of these the ringed and bearded seals were most important on a year round basis. Bowhead whales, belugas, walrus, polar bear, and sea ducks were also of much value and often of vital importance seasonably to the maintenance of the human population. One group of Eskimos abandoned the typical dependence on marine mammals by remaining permanently in the mountainous area at the head of the Colville River. These people, now located at Anaktuvuk Pass, developed a way of life dependent on caribou.

Since the late 1800's, the Eskimos of the arctic region have had increasing access to such foods as flour, sugar, coffee, and tea. Nevertheless, meat protein derived from wildlife resources remains the essential and staple food commodity. In the coastal villages, the meat of ringed and bearded seals is most important on a regular basis. Depending on the fortunes of the hunt, whale and walrus may periodically be utilized even more than seals. The Anaktuvuk people still rely primarily on caribou as a food source.

Since the early 1940's, greater quantities of non-Native foods have entered the Eskimos' diet. Generally, however, wildlife remains as the basic food source, both by preference and necessity.

The original dependence on wildlife as a source of clothing material has decreased. Seal skins are still used for foot gear and to a lesser extent for pants, parkas, and mittens. They are also used for covering boat frames and making rope. Ivory is now used primarily for carving artifacts for the tourist trade rather than for hunting implements, sled runner shoes. etc. Baleen whale has little value except for fabricating souvenirs. The furs of white fox are still harvested in quantity for commercial sales. Wolf and wolverine pelts usually find local utilization for clothes or trimming. Ground squirrels and marmots are occasionally used for clothing but are not taken in quantity. While the cut of clothing often remains distinctively Eskimo, cloth has replaced furs to a large degree in the typical Eskimo wardrobe.

The importance of wildlife in the Eskimo diet has been mentioned, though of much importance,too,is its use as dog food. In recent years, snow machines have replaced much of the original dependence on dogs and this trend will no doubt continue.

Relatively few species of wildlife in this region are harvested for purely commercial purposes. The exception would be white fox. A few wolf, wolverine, and seal skins are sold as are the skins of most polar bear taken when the pelts are prime. The meat and skins of caribou, seals, walrus, and whales are frequently sold or bartered within the region. This practice is becoming more common as more employment opportunities provide money but deny time for hunting by employed people.

Trophy hunting by guided sportsmen for polar and grizzly bear, wolf, sheep, and caribou contributes economically to the region and can be expected to increase in the future.

The former commercial value of baleen and raw ivory has greatly diminished. A limited quantity of ivory is carved for sale, though the carving industry is centered mainly in the Bering Strait region.

It is probable that the major value of wildlife resources in the arctic will remain of a subsistence and a sporting nature rather than commercial because the biological productivity per unit area is low.

The wildlife resources in the arctic region have two major values to the State. First, to the extent that they provide subsistence and a means of support to the inhabitants the state's economic base is enhanced. Second, the mere existence of this unique fauna will stimulate ever increasing interest on the part of tourists, sportsmen, and others who will contribute beneficially to the State economy.

The arctic region of Alaska was acquired in an essentially primitive, natural condition. It represents the only land area of this type which still maintains its ecological integrity largely intact. While it is known that petroleum and mineral resources exist, the values of the renewable natural resources also may prove to be exceedingly important to a nation where land without cultural disfiguration is becoming increasingly scarce. The scientific value of a natural unchanged area could be tremendous and certainly the aesthetic value to humans who must live in an environment thoroughly altered or conditioned by man cannot be underestimated.

Of national significance is the production of waterfowl which annually migrate to other states and countries. With the continuing decrease of production habitat in developing areas of the continent, the importance of waterfowl production in the arctic will be ever greater.

The two largest caribou herds in Alaska are centered in this region: The so-called Arctic Herd (about 300,000 animals) and the Porcupine Herd (140,000 animals). The latter herd regularly moves into Canada and represents a shared international resource in common with waterfowl, polar bear, walrus, seals, and whales.

The Arctic National Wildlife Range (approximately 13,900 square miles) is located in the northwestern part of the arctic region. The purpose of the Range is to preserve the magnificent wilderness, wildlife, and recreational resources on an undisturbed portion of arctic environment large enough to be biologically self-sufficient.

FIGURE IV - 2

WILDLIFE POPULATIONS
ARCTIC SLOPE REGION

Species	Population	Harvest				Remarks
		Average Yearly	Estimated Value	1958-1968 Trend	Probable Future Trend	
BIG GAME						
Caribou	450,000	15,000	750,000	Static	No change	
Moose	Uncommon	Low		Increase	Increase	
Dall Sheep	Common	40	20,000	Static	Increase	
Black Bear	Uncommon	Trace		Static	No change	
Grizzly Bear	Common	Low		Increase	Increase	
Polar Bear	Common	Under 100	200,000	Increase	Increase	
FURBEARERS						
Beaver	Rare	Trace		No change		
Muskrat	Rare	Trace		No change		
Lynx	Uncommon	Trace		No change		
Marten	Uncommon	Trace		No change		
Mink	Uncommon	Trace		No change		
Land Otter	Uncommon	Trace		No change		
Weasel	Abundant	Few Hundred		No change	Increase	
Wolverine	Common	Under 100		No change	Increase	
Arctic Fox	Abundant	900	15,300	No change		
Red Fox	Common	200	200	No change		
Coyote	Uncommon	Low		No change		
Wolf	Common	100	10,000	Increase	Increase	
MARINE MAMMALS						
Bearded Seal	Abundant	650	16,250	No change	No change	
Harbor Seal	Common	200	5,000	No change	No change	
Ribbon Seal	Rare	Trace		No change	No change	
Ringed Seal	Abundant	4,000	100,000	No change	No change	
Walrus	Common	200	40,000	No change	No change	
WATERFOWL						
Ducks	250,000	40,000*	124,000	Static	Increase	*Waterfowl harvests are continental totals
Geese	150,000	30,000	138,000	Static	Increase	
Swans	500			Static	No change	
Other Mammals						
Other Birds	Cranes					

Source: U. S. Department of the Interior, Bureau of Sport Fisheries and Wildlife, Anchorage, Alaska.

BERING STRAIT REGION

The wildlife resources of the Bering Strait Region include both land and marine birds and mammals as well as an abundance of fish. Grizzly bear, sheep, moose, and caribou are present, with the latter species often extremely abundant during periods of migration from the arctic region. Furbearing animals of importance include the wolf, wolverine, arctic fox, red fox, mink, land otter, weasel, beaver and muskrat. Ptarmigan are common to abundant throughout the region, and the drainages into Kotzebue Sound contain some of Alaska's more important waterfowl production areas. Ducks, geese, swans and cranes utilize the fresh or brackish water habitat, while sea ducks, and numerous species of colonial nesting sea birds such as murres and auklets concentrate in great numbers along the coasts and on the islands. Marine mammals include the polar bear; walrus; bearded, ringed, ribbon, and harbor seals; belugas, bowhead, California grey, and sometimes other species of whale.

Domestic reindeer production has been practiced in this region since the turn of the century. This industry had a strong influence on local economics for about three decades, 1910 to 1940, but since has declined in importance. (See agricultural livestock discussion in this Chapter.) Because reindeer and wildlife production on the same land are often incompatable, such animals as the caribou, grizzly bear and wolf are not permitted to produce according to the potential of the land to support them.

The major part of the native population of this region has historically been concentrated on or near the coast in keeping with their cultural adaptation to a primary dependence on marine resources for food and clothing over the region generally. The walrus was of even greater importance at a few places, particularly King,Sledge and Diomede Islands. Not only did walrus provide food, but the skins were employed as covering for boat frames. Bowhead whales were hunted at Wales, and King and Diomede Islands. The acquisition of darting guns (explosive harpoon heads) and shoulder guns (firing an explosive dart) from American whalers about 1860 permitted a more regular harvest and a market for baleen. However, the decline in whale abundance resulting from commercial exploitation by Yankee whalers made the harvest by Eskimos increasingly difficult. No bowhead whales have been taken by native hunters at Wales, formerly the center of an active whaling culture, during the past three decades. The small beluga, or white whale, has traditionally been taken by natives for food in both Kotzebue and Norton Sounds.

Ptarmigan, waterfowl and colonial sea birds and their eggs were utilized in quantity by those people having access to them. The harvest of molting waterfowl in large numbers by means of organized drives was a practice that has gradually disappeared. The introduction of firearms, permitting individuals to efficiently take birds, undoubtedly contributed to the decline of cooperative bird drives.

The larger land mammals were not important to the Eskimos of this region. Grizzly bears were difficult to take by primitive means. Moose were scarce or totally absent until recent decades and Dall sheep were available only in montainous areas distant from human populations. Caribou were seasonally present and often abundant. However, they could be taken in quantity only in quite special situations prior to the acquisition of firearms by the Eskimos. Thus, permanent settlement of some people in favored fishing and hunting locations (on the Kobuk and Noatak Rivers) was connected with increased efficiency of hunting resulting from the use of guns, as well as other economic and cultural factors.

Furbearing animals were harvested only in limited quantities to provide for clothing and some food needs prior to the era of commercial traders in the region. Thereafter, furbearers, particularly, were actively sought and became a major source of money income.

The present utilization of wildlife resources in terms of type and quantity has changed little from that of the past, despite substantial changes in the cultural, economic, and material character of the Eskimo's existence.

Wildlife is still the major food source in most communities, even though the usual grocery store foods are available and utilized regularly to some degree. Seals remain a basic and relished food of people in most coastal villages. Walrus share similar status at King and Diomede Islands. Bowhead whales are important at Point Hope, and caribou are essential to the inland people of the Noatak and Kobuk valleys. Snowshoe hares and arctic hares, ptarmigan, waterfowl and sea birds are utilized as opportunity affords in various localities.

Commercial utilization of wildlife resources remains scant beyond the sale of furs, some seal skins, and walrus ivory carved into artifacts. There is some sale or barter of meat and skins between hunters and non-hunters who have wage earning employment; although such transactions are difficult to evaluate.

As pointed out earlier, wildlife is a major element in the subsistence economies of most of the villages in the region. As such, the state has a vital interest in managing such wildlife to directly sustain these people until or unless other resources or industries are developed to structure local exonomies on a money or wage earning basis much beyond that currently in existance. In carrying out this management of wildlife, the state has set up harvest regulations which have considerably corrected a problem of wasteful harvest practices by Natives that developed with the availability of firearms

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Species	Po
BIG GAME	
Caribou	20
Moose	
Dall Sheep	
Black Bear	
Grizzly Bear	
Polar Bear	Co
FURBEARERS	
Beaver	Un
Muskrat	Co
Lynx	Un
Marten	Un
Mink	Ab
Land Otter	Co
Weasel	Co
Wolverine	Co
Arctic Fox	Co
Red Fox	Co
Coyote	Ra
Wolf	Co
MARINE MAMMALS	
Bearded Seal	Ab
Harbor Seal	Co
Ribbon Seal	Ra
Ringed Seal	Ab
Walrus	Co
WATERFOWL	
Ducks	7
Geese	
Swans	
Other Mammals	B
Other Birds	

Source: U. S.
Ancho

A colonial bird refuge, the Chamisso National Wildlife Refuge, is located within this region and represents the only colonial bird area of any significance between the Seward Peninsula and Cape Thompson. Other national and international wildlife management concern is current for walrus and polar bear populations. Both of these species remain in international waters almost entirely and their proper management may ultimately require international agreements or treaties. The waterfowl production and concentration areas of Selawik Lake and Shishmaref Inlet are also of particular national resource value in this region.

FIGURE IV - 3

WILDLIFE POPULATIONS
BERING STRAIT REGION

Species	Population	Harvest				Remarks
		Average Yearly	Estimated Value	1958-1968 Trend	Probable Future Trend	
BIG GAME						
Caribou	200,000*	15,000	750,000	Static	Increase	*Seasonally present
Moose	4,000	750	37,000	Increase	Increase	
Dall Sheep	1,500	30	15,000	Static	Increase	
Black Bear	3,000	150	7,500	Static	No change	
Grizzly Bear	500	20	10,000	Static	Increase	
Polar Bear	Common	200	400,000	Increase	Increase	
FURBEARERS						
Beaver	Uncommon	80	1,600	Static	No change	
Muskrat	Common	5,000	5,000	Variable	No change	
Lynx	Uncommon	300	9,000	Variable	No change	
Marten	Uncommon	90	1,300	Static	No change	
Mink	Abundant	2,000	30,000	Static	No change	
Land Otter	Common	300	7,500	Static	No change	
Weasel	Common	200	200	Static	No change	
Wolverine	Common	100	3,000	Increase	Decline due to scarcity	
Arctic Fox	Common	600	12,000	Variable	No change	
Red Fox	Common	250	2,000	Static	No change	
Coyote	Rare	Trace				
Wolf	Common	125	9,400	Increase	Decline due to scarcity	
MARINE MAMMALS						
Bearded Seal	Abundant	2,000	80,000	Static	No change	
Harbor Seal	Common	2,000	60,000	Static	No change	
Ribbon Seal	Rare	200	4,000	Static	No change	
Ringed Seal	Abundant	6,000	180,000	Static	No change	
Walrus	Common	1,000	100,000	Variable	Increase	
WATERFOWL						
Ducks	700,000	140,000	430,000	No change	No change	
Geese	10,000	2,000	53,000	No change	No change	
Swans	2,000			No change	No change	
Other Mammals	Bowhead Whales (Common)		Belugas (Common)			
Other Birds						

Source: U. S. Department of the Interior, Bureau of Sport Fisheries and Wildlife, Anchorage, Alaska.

BERING SEA REGION

The Bering Sea Region includes St. Lawrence, St. Matthew, and Hall Islands, but of these areas, only St. Lawrence has a tradition of use by humans and is now occupied.

Larger mammals of St. Lawrence are nearly all associated with a marine environment. Bearded, harbor, ringed and ribbon seals, walrus, polar bears, and arctic foxes are common. Bird life is abundant, and the island provides an important route for migrants passing between Siberia and Alaska. Many species of waterfowl are present in lowland lake habitats that occupy approximately a third of the island's area. Large colonies of murres, puffins, auklets and kittiwakes occur on cliff habitats.

Reindeer were stocked on St. Mathew Island by the Coast Guard during World War II. The herd population rose spectacularly and then crashed during the 1960's; there are very few reindeer now left on St. Mathew Island. An introduced herd of reindeer on St Lawrence Island has little effect on the island's economy or the utilization of wildlife.

The fauna of Hall and St. Matthew Islands is essentially similar to that of St. Lawrence. However, these islands are the only locations where the McKay's snow bunting is known to nest.

Eskimo residents of St. Lawrence Island depend on marine mammals as a primary means of subsistence, and for a large proportion of their monetary income. Meat from walrus harvested in 1966 for subsistence use was valued at $60,000. Value of raw ivory, skins, bacula and other saleable products exceeded $28,000 and the potential value of such products is considerably more. Seals provide a significant share of subsistence food; their skins are used in the home manufacture of boots and other wearing apparel, and raw skins have a value of at least $12,800 at current prices.

Whales, including belugas, bowhead, and grey, are hunted but relatively few are taken, and they do not provide a sustained or reliable means of subsistence.

Other wildlife including waterfowl and sea birds are used as an additional source of subsistence food, and skins of sea birds are sometimes used for parkas or other winter clothing.

Use of wildlife by persons other than Native residents of the region is negligible, consisting chiefly of Native guided hunts for walrus. Such hunts increase the monetary returns from walrus and do not change most subsistence values.

Present trends suggest a slight increase in the harvest of wildlife, particularly of walrus, for commercial uses and for sport hunting by persons who are not residents of the region.

The fauna of this region is of national concern because of the international distribution of most species of animals and birds.

The Bering Sea National Wildlife Refuge, which includes St. Matthew, Hall, and Pinnacle Islands, was established in 1909 primarily to protect the unique cliff colonies of sea birds and the only known nesting populations of McKay's buntings. The continuing scientific value of undisturbed island habitats such as those of Bering Sea Refuge, is unique for the study of evolution, biogeography, and biological phenomena, and the preservation of such areas as remain is of increasing importance.

FIGURE IV - 4

WILDLIFE POPULATIONS
BERING SEA REGION

Species	Population	Harvest				Remarks
		Average Yearly	Estimated Value	1958-1968 Trend	Probable Future Trend	
BIG GAME						
Polar Bear	Uncommon	2	4,000	No change	No change	
FURBEARERS						
Arctic Fox	Common	500	9,000	No change	No change	
Red Fox	Uncommon					
MARINE MAMMALS						
Bearded Seal	Common)					
Harbor Seal	Common)	1,600	57,000	Increase	Small Increase	
Ribbon Seal	Common)					
Ringed Seal	Common)					
Walrus	Common	1,000	200,000	Increase	Small Increase	
Sea Lion	Uncommon					Summer only
WATERFOWL						
Ducks	10,000	2,000	6,200	No change	No change	Estimates. Census data are not available.
Geese	500	100	500	No change	No change	
Swans	100			No change	No change	
Other Mammals	Ground Squirrel					
Other Birds	Ptarmigan, Murres, Puffins, Auklets, and Kittiwakes.					

Source: U. S. Department of the Interior, Bureau of Sport Fisheries and Wildlife, Anchorage, Alaska.

SOUTHWEST COASTAL LOWLAND

Wildlife populations in this region vary directly according to habitat. The eastern foot hills and much of the area along the Yukon and Kuskokwim Rivers are forested, but the largest portion of the region is of treeless, lowland, tundra containing innumerable lakes, ponds, and streams. Forested areas contain thriving populations of moose; a few caribou are found in the Kilbuck Mountains; and Nunivak Island contains a herd of domestic reindeer and the only herd of muskox in the United States.

The Lowland Delta is unique among waterfowl habitats in North America, and produces more than half of the continental populations of black brant, cackling geese, emperor geese, and Pacific white-fronted geese; nearly three-quarters of the western population of whistling swan, and large numbers of eiders, old squaw, scaup, green-winged teal, pintail, mallard, and other ducks. Almost the entire Siberian population of snow geese uses the coastal tundra as a staging area on their migration between California and Wrangell Island.

Beaver are numerous in forested areas and where woody vegetation extends into the tundra along streams. Land otters, mink, muskrat, and red foxes are widely distributed, but arctic foxes are confined to coastal areas and to Nunivak Island. Four species of seals, walrus, sea lions and belugas occur in coastal waters.

Large colonies of murres, puffins, kittiwakes and other sea birds nest on cliffs of Nunivak Island and Cape Newenham. Spruce and ruffed grouse are found in forested areas and ptarmigan primarily on the tundra, though moving to forested habitat in winter.

Various species of freshwater and marine fishes together with small mammals historically have provided the primary means of subsistence for residents of this region, and do so today. Although the Native residents of the region are gradually becoming somewhat less dependent on the wildlife resources, such utilization remains a primary factor in the survival of many villages.

State regulations governing the harvest of resident species of wildlife are liberal, and in the final analysis, harvests are governed largely by the effort expended by individual hunters. Federal regulations on the taking of migratory birds are more restrictive, but are generally ignored by native residents.

Moose are an important item of food in inland regions, but residents of the coast depend primarily on seals as a source of protein to supplement their diet of fish. Sea bird colonies of Nunivak and Cape Newenham formerly provided an important source of food to villages in their vicinity, but now are of negligible importance to the subsistence economy.

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In spring, waterfowl provide an important subsistence item in remote villages, but in other villages hunting of waterfowl is largely of a recreational character. The take of waterfowl on the Yukon-Kuskokwim Delta in spring is larger than the legal harvest of waterfowl in all of Alaska. Eggs of waterfowl are still used at some villages but are decreasing in significance. Use of waterfowl in summer is much less than in former years because of the increasing availability of employment in fishing or other industries, and duck and goose drives are now primarily conducted as a form of recreation.

Furbearers and marine mammals furnish an important source of cash income, both directly by sale of raw skins, or indirectly through their use in the manufacture and sale of such items as mukluks and parkas. The commercialization of the fur resource began long before occupation of Alaska by Americans; first by barter to other more northern communities of Eskimos; and later with Russians who had established several trading posts on the Yukon and Kuskokwim Rivers.

Despite changing cultural patterns resulting in the utilization of some food sources, other than the wildlife of the region, the wildlife food source is most critical to the human population. At the present time, the native and non-native population of the region is increasing rapidly (approximately 5% annually), whereas wildlife resources are limited, as they always have been in this area.

The result of an expanding human population with continual dependency upon the biotic resource may shortly present critical problems.

The role of wildlife resources as an important segment of the subsistence economy of native residents is at present the most significant aspect of the wildlife in this region to the state of Alaska. Harvest of wildlife resources is primarily by residents of the region, although an increasing harvest of migratory waterfowl is being effected by residents of other areas.

The muskox of Nunivak is of unique interest as the only herd in the state or country, and will provide stock necessary for re-establishing this animal in its former arctic habitat.

A large proportion of the continental populations of several species are dependent on the habitats of the Yukon-Kuskokwim Delta for their existence. These species, and others with a wider nesting distribution, will be of even more importance to the nation as other populations are lost through the continuing destruction of habitats in more highly developed regions.

Three National Wildlife Refuges are in this region. The Clarence Rhode and Hazen Bay National Wildlife Refuges of 1,800,000 acres insure preservation of the most critical nesting habitats of black brant, cackling geese, and emperor geese, as well as important habitats for white-fronted geese, whistling swans, many species of ducks, and smaller migratory birds. The Nunivak Island National Wildlife Refuge insures preservation of habitat for muskox, for the larger colonies of sea birds, and other forms of wildlife present on the island. Semi-domestic reindeer now replace caribou which became extinct on Nunivak near the end of the last century.

FIGURE IV - 5

WILDLIFE POPULATIONS
SOUTHWEST COASTAL LOWLAND REGION

Species	Population	Harvest				Remarks
		Average Yearly	Estimated Value	1958-1968 Trend	Probable Future Trend	
BIG GAME						
Caribou	1,000	100	5,000	Increase	No change	N.E. corner of region.
Moose	1,500	150	40,000	Increase	Increase	In forested areas.
Muskox	700	No harvests permitted.			Increase	Introduced, Nunivak only.
Black Bear	Common	50	5,000	No trend		Forested areas only.
Grizzly Bear	Uncommon	10	5,000	Increase	No change	
FURBEARERS						
Beaver	Common	850	20,400	Decrease	Increase	
Muskrat	Common	8,000	8,400	Variable	Variable	
Lynx	Common	300		Variable	Variable	Forest regions only.
Marten	Uncommon	100	1,500	No change	No change	Forest regions only.
Mink	Abundant					
Land Otter	Common	800	20,000	No change	No change	
Weasel	Common	200	200	No change	No change	
Wolverine	Uncommon	10	500	No change	No change	
Arctic Fox	Common	300	5,400	Variable	No change	Coastal regions only.
Red Fox	Common	250	2,500	No change	No change	
Wolf	Uncommon			No change	No change	
MARINE MAMMALS						
Bearded Seal	Common)					Valued at $10 per pelt
Harbor Seal	Common)					and $.25 per pound for
Ribbon Seal	Common)	3,000	105,000	No change	Decrease	meat averaging 100
Ringed Seal	Common)					pounds per animal
Walrus	Common	50	15,000	No change	Slight Increase	
Sea Lion	Uncommon	25	500		No change	Present only in summer
WATERFOWL[a]						
Ducks	1,870.000	280,000	868,000		No change	
Geese[b]	650,000	130,000	598,000		No change	
Swans	40,000	5,000	25,000		Decrease	
Other Mammals	Arctic Hare, Snowshoe Hare					
Other Birds	Ptarmigan, Cranes, Wilson Snipe, Murres, Puffins, and Kittiwakes.					

[a] 10 year average population. Important part of harvest in contiguous states and Canada.

[b] Does not include 200,000 migrant snow geese.

Source: U. S. Department of the Interior, Bureau of Sport Fisheries and Wildlife, Anchorage, Alaska.

KOYUKUK - LOWER YUKON REGION

The Koyukuk - Lower Yukon Region is large and varied, extending from flats of the Innoko River on the south, 500 miles to the Endicott Mountains on the north. Moose are common in forested areas at lower elevations. Scattered bands of caribou are found in the Kuskokwim Mountains and in small mountain ranges north of the Yukon River; larger concentrations are found in or near the Endicott Mountains through which a portion of the arctic herds migrate. Dall sheep are found only in the Endicotts, but black grizzly bear are present in low numbers through most of the region.

Beavers, mink and land otters are common or abundant in most drainages. Muskrats are widely distributed but are most abundant in lake habitats bordering the Yukon, Innoko, or Koyukuk Rivers. Marten, lynx, weasel, and wolverine are abundant in upland habitats, although the distribution of marten is restricted to forested regions.

Large floodplain areas border the major rivers which are excellent waterfowl habitat, producing fall populations of approximately one million ducks and 50,000 geese. Sandbars of the Yukon River provide a major staging area for geese prior to their southward migration. Major species of waterfowl include lesser Canada and white-fronted geese and pintail, scaup, widgeon, green-winged teal and mallard ducks.

Resident game birds include ruffed and spruce grouse, and rock and willow ptarmigan. Small animals of value either for fur or food include snowshoe hares, ground squirrels and marmots.

Wildlife within the Koyukuk - Lower Yukon Region is of primary importance to the subsistence economy of residents there, although some species, particularly sheep, grizzly bear, and wolves, are also hunted by residents of other regions or states. Because of the large variation in wildlife populations and alternative means of subsistence, the economic base of villages differs. Villages along the Yukon and Innoko Rivers make extensive use of the fishery resources which they supplement with black bear, moose, hares, grouse, ptarmigan, and waterfowl. Monetary income from wildlife is derived chiefly from the aquatic furbearers, beaver, muskrat, and mink, although marten are taken in some localities. Fisheries are of lesser importance in northern villages, Anaktuvuk, Wiseman, and Bettles, where caribou and moose provide the major items of subsistence. Grouse, ptarmigan and waterfowl are utilized depending on local availability. Furbearers listed for southern portions of the region are available in lower numbers, but wolves and wolverines are more abundant and an important source of monetary income.

Because this region is remote to population centers and most resident mammals and birds are more accessible elsewhere, nearly all of the wildlife harvest is by residents of the region. This characteristic of the harvest is not likely to be altered significantly in the near future.

Utilization of fish and wildlife resources is of major economic value to most residents, although employment in other industries both within and outside of the region is gradually increasing. However, change from the existing economy will probably not proceed as rapidly as in other, less remote regions.

National interest in the wildlife of the Koyukuk - Lower Yukon Region is related chiefly to the large populations of waterfowl which contribute to all flyways and which provide a resource of increasing importance.

FIGURE IV - 6

WILDLIFE POPULATIONS
KOYUKUK-LOWER YUKON REGION

Species	Population	Harvest				Remarks
		Average Yearly	Estimated Value	1958-1968 Trend	Probable Future Trend	
BIG GAME						
Caribou	Common	5,000	250,000	Increase	Increase	
Moose	Common	500	125,000	Increase	Increase	
Dall Sheep	1,000	100	50,000	Slight Increase	Increase	
Black Bear	Abundant	100	5,000	No change	No change	
Grizzly Bear	Common	25	12,500	No change	No change	
FURBEARERS						
Beaver	Common	3,500	70,000	No change	No change	
Muskrat	Common	5,000	5,000	Variable	Variable	
Lynx	Common	500	11,000	Variable	Variable	
Marten	Common	1,000	15,000	No change	No change	
Mink	Common	1,500	37,500	No change	No change	
Land Otter	Common	300	7,500	No change	No change	
Weasel	Common	100	100	No change	No change	
Wolverine	Common	50	2,500	No change	No change	
Red Fox	Common	100	500	No change	No change	
Wolf	Common	500	50,000	No change	No change	
WATERFOWL						
Ducks	1,000,000	200,000	610,000	No change	No change	
Geese	50,000	10,000	46,000	No change	No change	
Swans						
Other Mammals	Snowshoe hare, Marmot, Ground sqirrel, Red squirrel					
Other Birds	Ruffed, Spruce, and Sharptail grouse, Rock and Willow ptarmigan, Crane					

Source: U. S. Department of the Interior, Bureau of Sport Fisheries and Wildlife, Anchorage, Alaska.

UPPER YUKON - PORCUPINE REGION

The fauna of the Upper Yukon - Porcupine Region is similar to that of other interior Alaska regions. Two herds of caribou range between this region and adjacent regions of Alaska and Canada - the Porcupine herd of about 140,000 animals in the Brooks Range, and the Steese-Fortymile herd of about 50,000 animals into the White and Crazy Mountains. Moose are common throughout forested areas, particularly on the Yukon Flats. Both black and grizzly bears are common.

Many furbearing animals are found in the region. Beaver, mink, and muskrat are particularly abundant on the Yukon Flats where lake and stream habitats are ubiquitous. Marten are found primarily in the forested foothills, and wolves, foxes, weasels, ground squirrels, and snowshoe hares are common throughout most of the region.

Waterfowl habitats of the Yukon Flats produce fall flights of approximately 1.5 million ducks which include such important species as mallard, canvasback, pintail, and widgeon. The same habitat supports about 15,000 Canada and white-fronted geese and 10,000 cranes. Resident game birds include ruffed, spruce, and sharp-tailed grouse, and rock and willow ptarmigan.

This region supported a relatively small aboriginal population that was widely scattered along the Yukon and Porcupine Rivers and other major streams. By necessity, Native villages were relatively small in order that low populations of wildlife could be harvested efficiently. Northern groups depended primarily on caribou, occasionally taking mountain sheep, moose and bear. Groups along the Yukon River depended more on moose, hares and aquatic animals and birds. All groups made extensive use of fish.

The earliest significant contact between the aboriginal residents of the region and Caucasians was in 1847 when the Hudson's Bay Company established a post at Fort Yukon. The presence of the trading post did not appreciably change the subsistence economy. The period of gold rushes (circa 1900) resulted in more significant contact between races and limited employment of local natives. Schools were established at Fort Yukon and other villages, causing concentration of local groups and increasing difficulty in maintaining primitive subsistence cultural patterns, but great change did not occur until after World War II when an increasing number of persons found employment in construction, service, and other industries.

Trapping of furbearers continued to be a major source of income, and other wildlife and fish the major means of subsistence until recent years. Sale of furs declined to about 30% of total income by the period 1948-1955, and has decreased both in real and relative value since that time. A parallel decline of lesser degree has occurred in the use of wildlife for subsistence purposes.

Competition from Caucasian trappers for fur and for subsistence food items became important during and after the gold rush, but has recently declined as few new white trappers have replaced the earlier generation. Trapping by Natives has also declined and present hunting and trapping effort does not result in harvests that approach maximum sustained levels. Sport hunting and fishing by persons who are not residents of the region is increasing, but does not at the present time constitute a significant portion of the total harvest of wildlife. However, recreational hunting of moose, caribou and sheep by residents of other areas (Fairbanks) is expected to increase.

Wildlife habitats of this region are of significant national interest. The annual flight of 1.5 million ducks and geese produces approximately 231,000 days of recreation for hunters in many states and in Canada.

In addition to migratory birds, other animals and habitats are of national concern. This region contains part of the Arctic National Wildlife Range, established in 1960 to preserve its unique wildlife, wilderness, and recreational values, and an example of arctic habitat large enough to be biologically self sufficient.

FIGURE IV - 7

WILDLIFE POPULATIONS
UPPER YUKON-PORCUPINE REGION

Species	Population	Harvest				Remarks
		Average Yearly	Estimated Value	1958-1968 Trend	Probable Future Trend	
BIG GAME						
Caribou	See remarks	2,000	100,000	No change	Increase	Part of the range of the Porcupine herd of 140,000 Caribou and the Steese-Forty mile herd of 50,000 occurs in this area.
Moose	Common	350	100,000	No change	Increase	
Dall Sheep	Common	50	25,000	Increase	Increase	
Black Bear	900+	50+	2,500	Increase	Increase	
Grizzly Bear	500+	10+	5,000	Increase	Increase	
FURBEARERS						
Beaver	Abundant	550	11,000	No change	No change	
Muskrat	Abundant	36,000	36,000	Variable	Variable	
Lynx	Common	750	16,500	Variable	Variable	
Marten	Common	700	10,500	No change	No change	
Mink	Common	1,900	53,000	No change	No change	
Land Otter	Uncommon	25	700	No change	No change	
Weasel	Common	200	200	No change	No change	
Wolverine	Common	30	1,500	No change	No change	
Red Fox		400	4,400	No change	No change	
Wolf	Common	150	15,000	No change	No change	
WATERFOWL						
Ducks	1,500,000	300,000	725,500	No change	No change	
Geese	15,000	3,000	138,000	No change	No change	
Swans	Trace	None		No change	No change	
Other Mammals	Ground Squirrel, Red Squirrel, Snowshoe Hare					
Other Birds	Ruffed, Spruce and Sharptailed Grouse, Ptarmigan, Crane, Common Snipe					

Source: U. S. Department of the Interior, Bureau of Sport Fisheries and Wildlife, Anchorage, Alaska.

TANANA REGION

In this typically sub-arctic region wildlife varies according to habitat. Moose, which are presently abundant, occupy all habitat types from lowland muskeg to upland tundra and mountainous areas but are most numerous in forested areas. Caribou are seasonally distributed widely throughout the region from rolling upland tundra to the mountainous areas, dependent on where their wanderings take them. Dall sheep are located in the Alaska Range and the White Mountains where they normally occupy the higher slopes. Grizzly bears are found in the Alaska Range and upland tundra areas, while the black bear is scattered throughout the region concentrating seasonally to utilize favorable foraging areas. Upland game birds, including the rock and willow ptarmigan, are normally found in the upland tundra and mountain areas, while the ruffed, sharp-tailed, and spruce grouse occupy the forested areas. Furbearers, including beaver, mink, muskrat, land otter, wolverine, weasel, marten, red fox, lynx, coyote, and wolf are found throughout the area dependent on habitat preferences. Waterfowl nest on the lakes, sloughs, and ponds scattered throughout the lowland muskegs with concentrations in the Tetlin Lakes, Minto Lakes, Tolovana, Kantishna, Tanana Flats, and Lake Minchumina areas.

Natural erosion and mining operations have uncovered widespread evidence of pre-ice age mammal inhabitants in this region. Some of the skeletal material includes remains of moose, elk, muskox, caribou, wolf, bear, and squirrels that have living representatives in today's wildlife. Extinct species include the mastodon, mammoth, horse, camel, giant bison, puma, and sabre-toothed tiger.

The land animals, furbearers and fish have historically provided the primary means of subsistence for the Native residents of this region, but contribute to a more limited extent today.

The Tanana Region became the center of gold mining activity in Alaska at the turn of the 20th century. With thousands of stampeders and prospective miners moving into the area, market hunting for meat became an established occupation. Thousands of caribou, moose and Dall sheep were harvested to supply the needs of road houses, butcher shops, hotels, and mining camps. Indiscriminate use of fire to rid the country of mosquitoes and to make spruce timber more available for mining operations disrupted the natural scene. Big game animals became scarce in many areas. The caribou's migration routes changed, some completely disappearing from formerly occupied areas. The Native, during this period, had to depend on the remnant populations for his food and clothing, supplemented by what was obtained through trapping furbearers. Fish became his standby food, both for his family's and his dog team's consumption.

With the expansion of gold mining from individual claims to large scale operations using dredges, and development of the transportation system (riverboats, railroad, and highways) in this region, the ambitious Indian became a wage-earner: cordwood cutter and deckhand for the riverboats, section hand for the railroad, and laborer in the expanded gold mining industry. Seasonal work provided for many needs obtainable only with money, but with the closing of operations for the winter, he fell back on wildlife - fishing, trapping furs and hunting - as his primary source of food and cash income. This way of life still exists in remote villages, but in the Fairbanks-College-Clear area many Natives are well educated and work at highly skilled and specialized jobs.

Sport hunting by all races is becoming the primary use of the wildlife resource, although the meat so obtained is an important addition to any family's larder. Due to the high cost of living, many families would be unable to remain in the area without supplementing their income with one or more moose or caribou.

Mt. McKinley National Park, which occupies 3,000 square miles of the region is dedicated to the national interest of preserving this spectacular example of mountain topography, its wildlife. and sub-arctic flora.

FIGURE IV - 8

WILDLIFE POPULATIONS
TANANA REGION

Species	Population	Harvest				Remarks
		Average Yearly	Estimated Value	1958-1968 Trend	Probable Future Trend	
BIG GAME						
Bison	300	14	5,600	Static	Increase	
Caribou	82,000	2,000	220,000	Increasing	Increase	
Moose	Abundant	1,500	525,000	Increasing	Increase	
Dall Sheep	Common	350	175,000	Decreasing	Increase	
Black Bear	Common	200	20,000	Static	Increase	
Grizzly Bear	Common	70	35,000	Increasing	Increase	
FURBEARERS						
Beaver	Common	1,500	30,000	Decreasing	Increase	
Muskrat	Common	10,100	15,150	Variable	Variable	
Lynx	Common	1,500	22,500	Variable	Variable	
Marten	Common	850	12,750	Static	Increase	
Mink	Common	500	9,000	Increasing	Increase	
Land Otter	Uncommon	40	1,000	Static	Increase	
Weasel	Common	20	180	Static	Increase	
Wolverine	Uncommon	25	1,250	Variable	Increase	
Red Fox	Common	400	4,000	Variable	Increase	
Coyote	Common	10	50	Variable	Increase	
Wolf	Uncommon	200	20,000	Variable	Increase	
MARINE MAMMALS						
WATERFOWL						
Ducks	920,000	184,000	470,400	Increasing	Increase	
Geese	5,000	1,000	4,600	Increasing	Increase	
Swans	500	None	None	None	Increase	
Other Mammals	Snowshoe hare, Marmot, Ground squirrel					
Other Birds	Ruffed, Spruce, and Sharp-tailed grouse, Ptarmigan, Cranes					

Source: U. S. Department of the Interior, Bureau of Sport Fisheries and Wildlife, Anchorage, Alaska.

UPPER KUSKOKWIM REGION

The Upper Kuskokwim Region contains significant populations of fish and wildlife. Resident fish found in the various streams, lakes and sloughs include Dolly Varden, grayling, burbot, sculpin, sucker, blackfish, northern pike, stickleback, and several species of whitefish and inconnu. Anadromous fish are represented by four species of Pacific salmon: king, chum, coho, and sockeye. Two other anadromous species present are smelt and lamprey. The steelhead trout occurs here - the northernmost location where this species has been recorded.

The highly prized Dall mountain sheep is found in the rugged terrain of the various mountain ranges encompassing the drainage. Both the black and grizzly bears are well distributed throughout the area. Several herds of caribou are found: the Mulchatna-Rainy Pass herd of about 5,000 animals ranges into the Bristol Bay region to the south, and a herd of several thousand animals ranges throughout the Kuskokwim Mountains. Moose are widely distributed throughout the region.

Small game is represented by ptarmigan and sharp-tailed, spruce, and ruffed grouse. The snowshoe hare is found throughout the area. All of these species are cyclic in nature and seem to follow regular population cycles which, at times, bring them seemingly near the vanishing point.

The principal furbearer species present are muskrat, marten, beaver, fox, wolf, weasel, wolverine, mink, lynx, cyote and land otter.

Large numbers of ducks and geese nest in the Kuskokwim Basin. Scaup, pintail, widgeon, green-winged teal and mallard ducks, and Canada and white-fronted geese are some of the more important species.

The discovery of the Kuskokwim River in 1829 by the Russian, Vasilief, was a direct result of the Russian need for more fur to compensate for the decline of pelts along the southern coasts of Alaska. By 1840 the Russians had opened the Kuskokwim Basin to fur trade.

The renewable natural resources of this region have been and continue to be of major importance in the economy of the Native who depends, in large part, upon the fish and wildlife resources for food, clothing, and cash income. The fur resources are probably most important to the Natives and contribute significantly to the region's economy. Although the value of fur has decreased in recent years, this group of wildlife still provides a large portion of the cash income to both the Native people and white settlers and is the only commercial use made of the resource.

Fish and wildlife resources played an important part in the

1908 exploration for gold and early development of mining in the region. However, the mining industry has declined and is now of relatively minor importance.

The wildlife resources in the past were the foundation of the economy of the region. Today, the need for cash is being satisfied in part by seasonal employment, and more frequently individual families tend to depend upon the resource as a secondary, rather than a primary, source of food and cash.

Sport hunting and fishing is increasing and likely will gain in importance in the overall economy of this region.

FIGURE IV - 9

WILDLIFE POPULATIONS
UPPER KUSKOKWIM REGION

Species	Population	Harvest				Remarks
		Average Yearly	Estimated Value	1958-1968 Trend	Probable Future Trend	
BIG GAME						
Bison	Introduced 1965	None	None	None	Increase	
Caribou	7,000	500	25,000	Increase	Increase	
Moose	Common	150(1966)	37,500	Increase	Increase	
Dall Sheep	Common	70	35,000	Increase	Increase	
Black Bear	Common	100	5,000	Increase	Increase	
Grizzly Bear	Common	20	10,000	Increase	Increase	
FURBEARERS						
Beaver	Abundant	3,000	60,000	Decrease	Increase	
Muskrat	Common	500	500	Decrease	Increase	
Lynx		100	2,200	Variable	Variable	
Marten	Abundant	1,400	21,000	Increase	Increase	
Mink	Common	200	4,800	Increase	Increase	
Land Otter	Common	50	1,300	Increase	Increase	
Weasel	Common	200	200	Increase	Increase	
Wolverine	Common	50	2,500	Static	Decrease	
Red Fox	Common	50	550	Increase	Increase	
Coyote	Uncommon	10	50	Increase	Increase	
Wolf	Common	100	10,000	Variable	Variable	
WATERFOWL						
Ducks	50,000	10,000	31,000	Increase	Increase	
Geese	500	100	460	Increase	Increase	
Swans	Trace	Trace		Decrease	Decrease	
Other Mammals	Snowshoe Hare, Marmot, Ground Squirrel					
Other Birds	Ruffed and Sharp-tailed Grouse, Ptarmigan, Cranes, Whistling Swan					

Source: U. S. Department of the Interior, Bureau of Sport Fisheries and Wildlife, Anchorage, Alaska.

BRISTOL BAY REGION

This region is the "home" of the multi-million dollar Bristol Bay red salmon fishery which, unlike other salmon, spawn in lakes as well as streams. For this reason and because juvenile fish require a lake for rearing, Bristol Bay's lake surrounded waters are the world's greatest sockeye salmon producing area.

The region forms a basin surrounded by mountains and dissected by innumerable rivers, streams and numerous deep cold, clear lakes - a sport fisherman's paradise. Scattered spruce-birch-aspen forests are found on the northern part of the area and along the rivers extending up into the mountains in sheltered valleys to about 3,000 feet. The southern half of the area is virtually treeless, although thickets of willow and alder brush are scattered throughout the lowland tundra.

Wildlife populations vary according to habitat. Moose are found primarily in the forested areas but do extend their foraging into the willow thickets dominating the lowland tundra. Two caribou herds migrate seasonally into the area: the Mulchatna-Rainy Pass herd (5,000) from the north, and the Alaskan Peninsula herd (11,000) from the south. A third, small group of caribou is found in the Kilbuck Mountains on the western edge of the region. The lowland brush-covered tundra is prime habitat of the brown bear. A scattered population of black bear inhabits the forested northern half of the region.

Land furbearers include wolf, coyote, lynx, wolverine, red fox, marten and weasel. Aquatic furbearers include the beaver, mink, land otter and muskrat. Harbor seal, walrus, sea lion and beluga whale occur in coastal waters.

The pond covered lowland tundra is the breeding area for thousands of ducks, geese and swan including eiders, old squaw, scaup, green-winged teal, pintail, mallard and other ducks, white-fronted geese, and whistling swan. Even larger numbers of ducks and geese use these water areas during their annual spring and fall migrations for feeding and resting sites.

Ptarmigan are found primarily on the open tundra areas, while spruce and ruffed grouse occupy the forested lands to the north.

Various species of marine and freshwater fish and sea mammals provided the basic food requirements for the Natives who inhabited this region. Wildlife, however, contributed an important source of food and clothing, and until the development of the red salmon fishery, a source of cash needed to purchase such foods as flour, sugar and tea which became available with the arrival of the Russian and later the American fur trader. With the construction of canneries, the Native's way of life changed. In place of a complete dependence on the wildlife resources for subsistence, he now became a partial wage-earner and boat-owner engaged in harvesting and processing the red salmon for which Bristol Bay is famous. In off years when salmon runs are low, he has had to fall back on his alternate source of income - wildlife - for subsistence and survival. Generally, however, wildlife remains an important food source, both by preference and as recreation.

Relatively few species of wildlife in this region are harvested for commercial purposes. The exception are the furbearers, which are sought most intensively when salmon runs are low.

The valuable red salmon fishery is of importance to the state for it forms part of the economic base which supports public functions and responsibilities. State management of this valuable resource is directed toward the long term return on a continuing basis from this renewable natural resource.

A state game sanctuary located on the Walrus Islands is the only place in Alaska where walrus regularly come onto land. This area has national as well as state significance.

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FIGURE IV - 10

WILDLIFE POPULATIONS
BRISTOL BAY REGION

Species	Population	Harvest				Pr
		Average Yearly	Estimated Value	1958-1968 Trend		Futu
BIG GAME						
Caribou	15,000	500	55,000	Increase		Incr
Moose	Common	500	175,000	Increase		Incr
Dall Sheep	Uncommon	10	5,000	Increase		Incr
Black Bear	Common	100	10,000	Increase		Incr
Brown Bear	Common	124	186,000	Increase		Incr
FURBEARERS						
Beaver	Common	1,500	30,000	Variable		Incr
Muskrat	Common	200	300	Variable		Vari
Lynx	Uncommon	20	300	Variable		Vari
Marten	Uncommon	30	540	Variable		Vari
Mink	Common	400	4,000	Variable		Vari
Land Otter	Common	200	5,000	Variable		Vari
Weasel	Common	100	100	Variable		Vari
Wolverine	Common	20	1,000	Variable		Vari
Red Fox	Abundant	300	3,000	Variable		Vari
Coyote	Rare	10	50	Variable		Vari
Wolf	Common	50	5,000			
MARINE MAMMALS						
Harbor Seal	Common	1,000	25,000	Static		Stat
Walrus	3,000	10	2,000	Variable		Var
Beluga	1,500	100	5,000	Variable		Var
WATERFOWL						
Ducks	500,000	100,000	310,000	Increase		Inc
Geese	1,000	200	4,600	Increase		Inc
Swans	10,000					Inc
Other Mammals	Snowshoe hare, Ground squirrel, Marmot, Whales and Sea Lion					
Other Birds	Ruffed and Spruce grouse, Ptarmigan					

Source: U. S. Department of the Interior, Bureau of Sport Fish
Anchorage, Alaska.

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State game and furbearer regulations are designed to permit ample harvest of wildlife which provides a continuing source of subsistence to the people of the area in the form of food and cash income.

National interest and concern lies in preservation of the habitat so important as fisheries spawning areas and feeding and resting sites for the hundreds of thousands of waterfowl making use of the lowland tundra lakes and coastal marshes during their annual migrations. Also, thousands of ducks, geese, and swans nest in the area. As the nation's and the continental waterfowl producing areas continue to be destroyed in the more highly developed areas, Alaskan waterfowl become more important and the share contributed by this region will have a growing national significance.

The unique salmon and freshwater fisheries, large brown bear populations, and other wildlife, combined with landscapes of unusual beauty, offer significant potential for recreation of national importance.

FIGURE IV - 10

WILDLIFE POPULATIONS
BRISTOL BAY REGION

Harvest			Remarks
Estimated Value	1958-1968 Trend	Probable Future Trend	
55,000	Increase	Increase	
175,000	Increase	Increase	
5,000	Increase	Increase	
10,000	Increase	Increase	
186,000	Increase	Increase	
30,000	Variable	Increase	
300	Variable	Variable	
300	Variable	Variable	
540	Variable	Variable	
4,000	Variable	Variable	
5,000	Variable	Variable	
100	Variable	Variable	
1,000	Variable	Variable	
3,000	Variable	Variable	
50	Variable	Variable	
5,000			
25,000	Static	Static	
2,000	Variable	Variable	
5,000	Variable	Variable	Closed Season
310,000	Increase	Increase	
4,600	Increase	Increase	
		Increase	

rel, Marmot, Whales and Sea Lion

tarmigan

Interior, Bureau of Sport Fisheries and Wildlife,

ALEUTIAN REGION

Fur seals and sea otters are of much historical interest in this region. Once almost extinct from years of overhunting, strict protection and sound management practices restored their abundance to 1.5 million fur seals and 30,000 or more sea otters. The sea otter is found principally off the islands in the central part of the chain from Adak to Kiska and along the lower Alaska Peninsula. The American seal herd, comprising 80% of the world's fur seals, congregates during the breeding season on the Pribilof Islands. Another and much larger sea mammal, the northern sea lion, is common throughout the area. Harbor seal are abundant while walrus are uncommon to rare, hauling out occasionally only at Amak Island off the southwest coast of the Alaskan Peninsula during their winter migration from the northern parts of Bristol Bay.

Moose, caribou, brown bear, wolf, and wolverine are found on the Alaskan Peninsula and Unimak Island, an ecological extension of the mainland to the west. Except for the tundra vole, small mammals like voles, shrews, lemmings, ground squirrels, and weasel are not found west of Unimak. Other land and aquatic furbearers including beaver, mink, muskrat, land otter, wolf, wolverine, and weasel are found primarily on the Alaskan Peninsula and on Unimak Island.

Formerly, the blue phase of the Arctic fox was found in the Pribilofs and Attu, and the red fox on islands from Unimak eastward. Other islands were not inhabited by foxes. Principally during the 1915-1925 period and later, blue fox were introduced on most of the Aleutians, converting them into commercial fur farming enterprises under lease from the federal government. Presence of the introduced foxes resulted in the extermination of much of the bird life of many islands. The pelts now have little value and complete removal of the introduced fox is necessary to restore native bird life. This has already been demonstrated on Amchitka with an immediate and striking increase in wildlife on the island.

Another unfortunate result of modern occupation of the islands within the region has been the introduction of the Norway rat. These rodents also have a serious effect on nesting birds but the possibility of eliminating the rats is very remote.

The most obvious feature of Aleutian wildlife is the bird life. The easternmost islands have a fauna typical of the Alaskan mainland, while the western islands have Asiatic characteristics. Hundreds of thousands, perhaps millions of colonial sea birds -- fulmars, petrels, cormorants, kittiwakes, gulls, guillemots, murres, murrelets, auklets, and puffins -- congregate in vast nesting rookeries. Three species of loon are found there.

Great numbers of waterfowl winter in and among the islands. Of all the emperor geese in the world (150,000), over three-fourths winter in this area. Formerly the Aleutian Canada goose lived on all the islands from Amlia west; now it is found only on tiny Buldir Island which escaped fox introductions and is now one of the world's rarest birds. During the summer, common teal, mallards, pintail, greater scaup, merganser, and common eider ducks nest there. The tidal lagoons of Izembek Bay (valuable for its vast eelgrass beds and bordering upland tundra) support the continent's entire black brant population for two to three months each year, providing a unique migration feeding area essential to the survival of this species.

Land birds common to the area include the bald eagle, peregrine falcon, and a few gyrfalcons. Shorebirds nesting in very large numbers include the black oyster catcher, rock sandpiper and northern phalarope. The rock ptarmigan is found throughout the island area with willow ptarmigan on Unimak Island and the Alaska Peninsula. A number of Asiatic birds are found, including the whooper swan, falcated teal, and Steller's sea eagle.

The streams and rivers emptying into Bristol Bay from the Alaskan Peninsula and issuing from the islands in the chain are used by large numbers of spawning salmon (primarily pinks) which make a valuable contribution to the multi-million dollar commercial fishery located in the area.

The combined acreage of the Aleutian Region totals 21,719 square miles. Federal reserve lands within the area total 4,990 square miles and include the Pribilof Islands, Aleutian Island National Wildlife Refuge, Izembek National Wildlife Range, and Bogoslof National Wildlife Refuge which were set aside to preserve areas of national interest and concern.

The marine resources traditionally have been of great importance to the Natives of the region. All animals, fish and invertebrates found in the area have contributed to the diet, clothing, and equipment of two distinct periods of human occupancy -- pre-Aleut and Aleut. Exploited first by the Russian and later by the American who made use of the Natives' skills in harvesting the sea otter and fur seal, the peoples of the region have rapidly changed from a dependence on wildlife for food to a wage-earning existence. Because of the seasonal nature of their work, however, they have been unable to maintain a standard of living to which most Americans are accustomed.

Marine mammals, fish, and invertebrates still make up an important portion of the food supply of the present day Aleut, but largely to supplement a diet based on his wage-earning capacity. Today's Aleut is either engaged in the local commercial fishery for himself or works for wages as a laborer in the Bristol Bay -- Aleutian fishery and the Pribilof sealery.

The Aleutian Region contains wildlife resources of much concern to people of Alaska and the nation. The sea otters and fur seals played an unusual role in the exploration and development of a vast territory. Hunted to the verge of extinction, their restoration has resulted in continuing economic benefits. The region contains habitats of vital importance to the survival of species and sub-species such as black brant, emperor geese, Aleutian goose, and many island races of smaller birds, and the islands form a vast outdoor laboratory for the study of evolution of plants and animals. The waterfowl foraging areas such as Izembek Bay have vital part in maintaining this important recreational resource on the Pacific coasts of Canada, the United States, and Mexico.

FIGURE IV - 11

WILDLIFE POPULATIONS
ALEUTIAN REGION

Species	Population	Harvest				Remarks
		Average Yearly	Estimated Value	1958-1968 Trend	Probable Future Trend	
BIG GAME						
Caribou	11,000	200	22,000	Increasing	Increase	
Moose	Common	500	175,000	Increasing	Increase	
Brown Bear	Common	130	195,000	Increasing	Increase	
FURBEARERS						
Beaver	Common	500	10,000	Decrease	Increase	
Muskrat	Common	300	450	Variable	Variable	
Mink	Common	200	4,000	Variable	Variable	
Land Otter	Common	100	2,500	Variable	Variable	
Sea Otter	30,000	630	176,400	Increase	Increase	Harvest under State Control
Weasel	Common	100	100	Variable	Variable	
Wolverine	Uncommon	10	500	Variable	Variable	
Arctic Fox (blue)	Common	100	1,200	Variable	Variable	
Red Fox	Common	100	1,000	Variable	Variable	
Wolf	Uncommon	20	1,000	Variable	Variable	
MARINE MAMMALS						
Bearded Seal	Rare					
Harbor Seal	10,000+	1,000	25,000	Variable	Increase	
Ribbon Seal	Rare					
Ringed Seal	Rare					
Walrus	Rare					
Sea Lion	50,000+					Experimental harvests have been conducted at Ugamak Island
WATERFOWL						
Ducks	100,000	20,000	62,000	Increase	Increase	
Geese	500	100	460	Increase	Increase	
Swans	1,000	None	None	None	Increase	

Other Mammals: Snowshoe hare, Whales

Other Birds: More than one million waterfowl use Izembek Bay as a migration area. Crane 500, Ptarmigan, Wilson Snipe, Sea Birds (Colonial), Winter wren, Rosy finch, Savannah, Song, and Fox Sparrows, Longspur, Snow Buntings.

Source: U. S. Department of the Interior, Bureau of Sport Fisheries and Wildlife, Anchorage, Alaska.

KODIAK REGION

The Alaska brown bear is the outstanding animal species of this region. Kodiak Island and the Alaskan Peninsula possesses the best habitat in Alaska for this animal. The bear occurs throughout the area. Other indigenous big game include the caribou and moose, which occasionally are found on the eastern side of the Alaska Peninsula although their primary range is on the western drainage. Native to the Alaska Peninsula are land otter, wolverine, mink, marten, red fox, arctic fox, wolf, coyote, lynx, snowshoe hare and arctic hare. The land otter is native also to the Kodiak Island group.

Sea otter have scattered areas of abundance along the Alaska Peninsula coast, and the Shuyak-Barren Island area. Sea lion are common as are harbor seal. Whales of several species are commonly seen in adjacent waters.

Many game species have been introduced to the Kodiak Island group. Those that have now reached a harvestable status include: the Sitka black-tailed deer (1934), elk (1927), beaver (1929-31), snowshoe hare (1935-36), and muskrat (1929). Introductions that have not reached harvestable numbers include: mink, marten, mountain goat (1952), Dall sheep (1967), moose (1967) and spruce grouse.

Upland game birds include the willow and rock ptarmigan. Although this region is not an important waterfowl production area, the offshore waters offer resting sites for migratory waterfowl and large numbers winter in the region. For example, the Trinity Islands off the south end of Kodiak have several thousand emperor geese in winter, and Kamishak Bay may have thousands of old squaw and eider ducks at various winter periods.

There are a number of sea bird rookeries in the Kodiak-Afognak Island group, the Barren Islands, the Semidi Islands and the Alaska Peninsula.

The region was originally occupied by a relatively large population of Aleuts and Kaniagmiuts. These people were dependent on the sea for living and utilization of terrestrial species was low within the region. Sea mammals - the sea otter, sea lion, seals, porpoises and even whale - where, however, necessary to meet their needs for food, clothing, and for other necessities such as boats, shelter, and oil for lamps. Some brown bear were taken for food, and occasionally bear are used for this purpose today.

During the period of Russian occupation extending from 1783 to the United States' purchase of Alaska in 1867 and, in fact, extending thereafter until about the turn of the century, Kodiak was the center of a wide ranging geographical and commercial quest for sea otter fur. This harvest reached a peak in 1885 when approximately 1,500 pelts were shipped from Kodiak. The unrelenting search depleted sea otter populations to the verge of extinction until 1911 when all harvest was terminated, to be resumed by the State of Alaska fifty-six years later in the western Aleutians. Sea otter in the Kodiak region have, fortunately, recovered although not yet to the point where former range is occupied and a commercial harvest can be undertaken.

There was marked influence on small game populations by the Katmai eruption of 1912 and a lesser effect on the brown bear.

During the 1920's and 1930's there was recognition of the Kodiak bear as the largest carnivorous animal in North American and that it offered possibilities as a trophy animal. Since that time the island and adjacent Alaska Peninsula have become world famous among hunters as the location to seek this bear. A commercial guiding industry developed. This expanded to the extent that in 1968 the bear kill exceeded production, and it became necessary to apportion the hunting effort through a permit system.

Although the bulk of the harvest of brown bear is by nonresidents of the region, there is considerable hunting activity generated locally. This is aimed principally at introduced Sitka blacktailed deer and the elk of Afognak and Raspberry Islands. Small game - the willow ptarmigan and snowshoe hare - are sought by local Kodiak residents.

The indigenous people of the region, still representing a substantial segment of the population, are concerned primarily with the commercial fishing industry and with a wage economy. A few have turned to professional guiding and some have followed this profession half a lifetime. There is a minor trapping activity on Kodiak and on the Alaska Peninsula. The Natives of the Kodiak Region, as in the past, have only a minor dependency on the wildlife, although this does not hold true for the fisheries resource of the sea.

Forty-six percent of the guides of Alaska are licensed to operate in the Kodiak Region; 12 reside on Kodiak Island. There has been an increasing interest in a non-consumptive use of the bear resource through photographic parties and similar expeditions, and the guiding industry has participated in and fostered this use. The contribution to the economy generated locally in the Kodiak area in connection with the brown bear resource is on the order of $300,000 annually. This is primarily through the non-resident segment of hunters, world wide in origin, who account for more than half of the harvest. Resident hunters, primarily military personnel, also utilize the transportation and board and lodging segment of the Kodiak economy.

Through the years this region has come to be recognized nationally and internationally as the primary habitat for the Alaska brown bear. The largest recorded bear trophies have come from this region, primarily Kodiak Island. A widespread interest in the conservation of the bear has resulted. Through this stimulation, the Kodiak National Wildlife Refuge was set aside in 1941 to preserve the habitat of the Kodiak bear and insure its preservation. Another outstanding unit of bear habitat, the McNeil River area on Kamishak Bay, has been designated a game sanctuary by the Alaska legislature. This sanctuary includes a spectacular salmon stream where large numbers of bear may be observed fishing. Although relatively difficult of access, this area receives considerable use by photographic parties and people who wish to see bear.

The Katmai National Monument, established primarily for its striking geological features, has a good brown bear population as well as other wildlife. An area closed to hunting, it serves as a natural wildlife exhibit visited by many tourists in the course of the summer.

Although generally viewed as a localized resource, the large bird colonies of the region and the increasing sea otter herds are of interest throughout the nation. The Semidi Islands, an outstanding nesting area for marine birds, is established as a National Wildlife Refuge.

The Chugach National Forest includes Afognak Island and is managed under the U.S. Forest Service multiple use policy. This recognized the importance of wildlife resources in the national interest and here the main concern is for the Alaska brown bear and the introduced elk.

FIGURE IV - 12

WILDLIFE POPULATIONS
KODIAK REGION

Species	Population	Harvest				Remarks
		Average Yearly	Estimated Value	1958-1968 Trend	Probable Future Trend	
BIG GAME						
Caribou	Native owned	Reindeer herd (600 - minor harvest)				
Elk (Introduced)	1,200	120	36,000	Static	Increase	
Moose (Intro.)	Uncommon	Trace				Introduced 1967
Dall Sheep(Intro.)						Introduced 1967
Mountain Goat	70	None			Increase	Introduced 1967
Brown Bear	Abundant	200+	300,000	Increase	No change	
Deer (Intro.)	Abundant	1,000	100,000	Static	Increase	
FURBEARERS						
Beaver	Abundant	200+	4,000	Static	No change	
Marten(Intro.)		30				Introduced Afognak Isl.
Mink (Intro.)		Trace				Introduced Kodiak Isl.
Land Otter	Abundant	200+	5,200	Decrease	No change	
Weasel		Trace				
Wolverine	Uncommon					
Red Fox	Abundant	200+	2,200	Decrease	No change	
Wolf	Uncommon Alaska Peninsula.					
MARINE MAMMALS						
Sea Otters	4,000					
Sea Lions		(Var)3,000	30,000	Increase	Decrease	
Harbor Seal	10,000+			Increase	Decrease	
WATERFOWL						
Ducks	A coastal wintering area for several species.					
Geese	A coastal wintering area for several species.					
Swans	Uncommon					
Other Mammals						
Other Birds	Ptarmigan - Important game bird Kodiak, Bald Eagle nesting areas, Introduced Spruce Grouse.					

Source: U. S. Department of the Interior, Bureau of Sport Fisheries and Wildlife, Anchorage, Alaska.

COOK INLET REGION

A number of factors contribute to make the Cook Inlet Region one of the primary wildlife areas of the state. Over half the human population of Alaska live in this region, thus wildlife utilization is relatively high.

Nearly a third of the Alaska moose are supported in this region because of favorable vegetative, climatic and topographic features. Moose populations have varied greatly in the past, but are now high because of fortuitous range conditions produced largely by man-caused fires.

The Nelchina caribou herd (70,000) ranges into the Talkeetna Mountain area. Caribou, formerly native to the Kenai, were reintroduced to the area in 1965.

Some of the more important Dall sheep ranges in the state are within this region in the Talkeetna, Chugach, and Kenai Mountains and the Alaska Range. A small population of mountain goats are also distributed through the eastern mountains.

Brown and grizzly bears are found in limited numbers throughout the region, while the black bear exists in relative abundance.

The area is rich in most of the fur animals that occur in Alaska. Upland game birds are represented by three species of ptarmigan and the spruce grouse. The snowshoe hare, cyclic in abundance, occurs throughout.

The coastal lowlands bordering Cook Inlet support a low population of breeding waterfowl and during the fall migration period serve as resting areas for thousands of ducks and geese moving south. The interior lowlands of the Kenai Peninsula, the Susitna Valley and the west side of Cook Inlet is one of the principal nesting areas for the rare trumpeter swan with a breeding population of approximately 250 birds.

Prior to the Russian period, the Cook Inlet Region had a sparse Native population which subsisted entirely on the fisheries and wildlife resources of the region. Russian settlement in the mid-19th century had little impact on Native subsistence use of wildlife, but did utilize wildlife in support of settlements and through increased fur harvests.

The fur harvest and prospecting period around the turn of the century brought further use of wildlife in mining settlements that were initially concentrated in the Turnagain Arm area. Commercial harvest of wildlife as a meat source increased during the railroad co construction period of World War I. Much of the trophy hunting by

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non-resident parties during the 1920's and 1930's was centered in this region, principally on the Kenai Peninsula.

Increased settlement following World War II has brought heavy demands on the wildlife resources of the region to the extent of overharvesting localized populations of wildlife.

Native subsistence use, except for a few small outlying communities, has been largely supplanted by a combination of sport and subsistence hunting by non-Native people. Fur harvest has greatly decreased and is now somewhat of a recreational activity.

As a recreational resource and as a supplemental meat source, the wildlife of this region is of major importance to more than half the people of the state. Approximately one third of Alaska's moose are in this region. Over half the moose harvest occurs here, a meat source of 2 million pounds valued at over a million dollars annually.

As a basic resource, the wildlife is essential to the overall recreational program of the state. It contributes in large measure to the attraction and support of the tourist industry.

Some of the unique wildlife features of this region are regarded as significant in the national sense and thus are of concern to people throughout the nation.

The Kenai National Moose Range was dedicated in 1941 to preserve an ecological unit of environment for the Alaska moose and and associated wildlife, and now serves a prominent place in national recreational interests and in Alaska receives the heaviest outdoor recreational use of any area in the State.

The Dall sheep is unique to Alaska and adjacent Canada. This region supports about 5,000, or one fifth of the total population. The continued welfare of these sheep herds and availability·for public enjoyment is a concern of both Alaskans and residents throughout the nation.

One third of the Alaskan population of trumpeter swan nest in this region. As a rare species of North America, there is a national obligation to insure the preservation of this bird, largest of all waterfowl.

The Cook Inlet marshes provide a resting area to hundreds of thousands of ducks and geese. The waterfowl production, while low (150,000 fall population), nevertheless is an important contribution to the maintenance of continental populations.

One of the outstanding kittiwake breeding colonies in Alaska is located on Chisik Island in the Tuxedni National Wildlife Refuge on the west side of Cook Inlet.

FIGURE IV - 13

WILDLIFE POPULATIONS
COOK INLET REGION

Species	Population	Harvest				Remarks
		Average Yearly	Estimated Value	1958-1968 Trend	Probable Future Trend	
BIG GAME						
Caribou	Variable	Low (Nelchina Herd) introduced Kenai 1965			No change	
Moose	40,000±	5,000 variable	1,750,000	Increase	No change	
Dall Sheep	5,000	150	75,000	Increase	Increase	
Mountain Goat	Uncommon	50	25,000	Static	No change	
Black Bear	Abundant	Variable				
Brown Bear	Common	50	75,000	Static	No change	
Grizzly Bear		(Brown Bear and Grizzly Bear combined figures)				
FURBEARERS						
Beaver	Abundant	1,200	24,000	Decrease	No change	
Muskrat	Common	600	630	Decrease	No change	
Lynx	Variable	450 variable	9,900	Decrease	No change	
Marten	Common	900	11,025	Decrease	No change	
Mink	Common	300	7,110	Decrease	No change	
Land Otter	Common	40	1,040	Decrease	No change	
Weasel	Common	130	156	Decrease	No change	
Wolverine	Common	Low		Decrease	No change	
Red Fox	Common	100	1,100	Decrease	No change	
Coyote	Common	Medium		Decrease	No change	
Wolf	Uncommon	Low		Decrease	No change	
MARINE MAMMALS						
Harbor Seal	Common	Low				
WATERFOWL (Fall population excluding migrants)						
Ducks	150,000	30,000	93,000	Increase	Increase	
Geese	500	100	450	Increase	Increase	
Swans (Trumpeters)	750		None			
Other Mammals	Snowshoe hare - moderate harvests.					
Other Birds	Willow, Rock, and White-tail ptarmigan, Spruce Grouse					

Source: U. S. Department of the Interior, Bureau of Sport Fisheries and Wildlife, Anchorage, Alaska.

COPPER RIVER REGION

Two factors make this region one of the most important recreational regions of the state: 1) an abundance and variety of wildlife, and 2) its location and accessibility in relation to major population centers. Almost all activity in the area is directly related to wildlife.

The principal wildlife species of the region include caribou, moose, Dall sheep, mountain goat, black and grizzly bear, bison, wolf, wolverine, mink, marten, lynx, coyote, beaver and fox; the waterfowl - trumpeter swan, pintail, mallard, widgeon, scaup, goldeneye, scoter, bufflehead, shoveller, green-winged teal; three species of ptarmigan; the spruce, ruffed, and sharp-tailed grouse; and the snowshoe hare.

Two of the 11 Alaskan caribou herds range in this area. The Nelchina herd of approximately 70,000 animals ranges throughout the upper Copper. As the most accessible caribou herd in the state, it supports the highest "sport" hunting effort, with a harvest of 4,000 to 8,000 caribou per year. The Mentasta herd, estimated at 5,000 animals, ranges into the northeastern part of the region. There is some interchange between the two herds.

The moose population of the region is estimated at 25,000 to 30,000 animals, roughly 20-25% of the total state population. These are distributed throughout the area below the 4,000 foot level. The annual harvest of about 1,800 animals (1/5 of the state harvest) is concentrated in relatively few parts of the region and is about one half to one third of the productive capacity of the population. The Wrangell Mountains, one of the most popular Dall sheep hunting areas of the state, produces an annual harvest of 125-150. Other sheep ranges border the area on all sides yielding a total estimated annual harvest of 300, nearly a third of the total for the state.

Both grizzly and black bear range throughout the area. Of the estimated harvest of 50 grizzly bear, two thirds are taken by non-resident hunters.

Bison were introduced into this region in 1950 and in 1962. This introduction has resulted in a productive herd along the east and north sides of the Copper and Chitina Rivers. The first hunts in 1964 and 1965 resulted in a take of 14 and 11 animals respectively.

There are now about 300 wolves in the region. Given protection in 1957, wolf hunting was resumed in 1968 when 177 permits were issued and 79 wolves taken. Of the harvest of 160 wolverine in 1965-66, three fourths were taken by professional trappers, the remainder as a recreational activity.

The waterfowl habitat of the region is the Lake Louise plateau. A fall flight of about 212,000 ducks originates from the area. The value of the region as a migration resting areas or as a wintering area is low because of late spring breakup and early fall freeze-up.

The basin supports a breeding population of 800 trumpeter swans, producing a fall flight of about 1,000 of these rare birds, about one fourth of the total estimated North American population.

A low Native population was originally entirely dependent on the fish and wildlife resources of the region, a dependency that continues in modified form today. Increased wildlife use was stimulated through traffic to interior Alaska over the Glenn and Richardson Highways. Mining activities in the region through the 1920's and early 1930's required further use of wildlife in support of such settlements as Kennicott, McCarthy, and Copper Center.

Although Alaskan Natives now make up about one third of the resident population, subsistence use by these people is a small part of the total harvest of game taken principally by hunters from the large population centers of Anchorage and Fairbanks.

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FIGURE IV - 14

WILDLIFE POPULATIONS
COPPER RIVER REGION

Species	Population	Harvest			
		Average Yearly	Estimated Value	1958-1968 Trend	Pro Future
BIG GAME					
Bison	200	14 (1964)	5,600	Increase	Incr
Caribou	70,000	8,000	880,000	Increase	Incr
Moose	30,000	1,800	630,000	Increase	Incr
Dall Sheep	Abundant	300	150,000	Increase	No c
Mountain Goat	Uncommon	Low			
Black Bear	3,500	Moderate		Increase	Incr
Grizzly Bear	1,000	50	25,000	Increase	Incr
FURBEARERS					
Beaver	Abundant	300	6,000	Decrease	No c
Muskrat	Common	Trace			
Lynx	Abun.-Var.	1,600 Var	35,200	Decrease	No c
Marten	Common	110	1,350	Decrease	No c
Mink	Common	150	3,555	Decrease	No c
Land Otter	Common	20	520	Decrease	No c
Weasel	Common	Low		Decrease	No c
Wolverine	Abundant	160	4,800	Decrease	No c
Red Fox	Abundant	110	1,210	Decrease	No c
Wolf	Common	80	8,000	Decrease	No c
WATERFOWL - Fall populations excluding migrants					
Ducks	212,000	40,000	124,000		No c
Geese	Trace				
Swans (Trumpeter)	1,000	None			
Other Mammals					
Snowshoe Hare					
Other Birds					
Willow, Rock, White tail Ptarmigan; Spruce, Ruffed & Sharp-tailed					

Source: U. S. Department of the Interior, Bureau of Sport Fishe
Anchorage, Alaska.

This region is crossed by the main highway network between Alaska's two largest cities. It is readily accessible to two thirds of Alaska's population, plus large numbers of out-of-state tourists, hunters and recreationists. Thus, it is a primary recreation area of the state.

The economic impact of the wildlife resources and wild lands of this region extends to much of the state. Seventy-five percent of the state's 376 big game guides are registered to hunt here. The region is a primary attraction to draw tourists to the state and serves the same attraction to residents.

An estimated two million pounds of caribou and moose meat are harvested here each year representing a subsistence value alone of about one million dollars.

As an extensive habitat unit for the wilderness game unique to Alaska, the status of the region is of concern to people throughout the United States.

Waterfowl production contributes to the support of waterfowl hunting in the lower states. The nesting habitat of one quarter of the continent's trumpeter swan population is a necessary consideration in the national program for the conservation and restoration of this species.

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FIGURE IV - 14

WILDLIFE POPULATIONS
COPPER RIVER REGION

	Harvest			Remarks
ge y	Estimated Value	1958-1968 Trend	Probable Future Trend	
964)	5,600	Increase	Increase	
0	880,000	Increase	Increase	
0	630,000	Increase	Increase	
0	150,000	Increase	No change	
rate		Increase	Increase	
0	25,000	Increase	Increase	
0	6,000	Decrease	No change	
e				
0 Var	35,200	Decrease	No change	
0	1,350	Decrease	No change	
0	3,555	Decrease	No change	
0	520	Decrease	No change	
		Decrease	No change	
0	4,800	Decrease	No change	
0	1,210	Decrease	No change	
0	8,000	Decrease	No change	
igrants				
00	124,000		No change	

il Ptarmigan; Spruce, Ruffed & Sharp-tailed Grouse

he Interior, Bureau of Sport Fisheries and Wildlife,

GULF OF ALASKA REGION

Big game animals of this region are mountain goats, moose (introduced), black-tail deer and brown, black and glacier bears. Fur animals include mink, otter, marten, weasel, wolverine, coyote, wolf, and beaver. Bird life is abundant; many of the islands contain rookeries of sea birds. The Copper River Delta supports the total breeding area for the dusky Canada goose and one of the major trumpeter swan nesting grounds in North America. Ducks and shorebirds of many species also breed on the delta. The bald eagle is abundant throughout the region.

Prominent marine mammals are the sea otter, harbor seal, and sea lion. Whales and porpoises also frequent the coastal waters.

The region is extremely rich in fishery resources, particularly salmon, halibut, herring, crabs and clams.

Historically, the culture and economy of the Native inhabitants of this region were oriented toward a dependence on marine resources. Fish and marine invertebrates were basic food sources supplemented by birds, eggs and the flesh of marine mammals. Furs and skins were used for clothing, but assumed commercial importance after the arrival of Europeans and the development of the fur trade. Sea otter produced the most valued peltry and were exploited nearly to the point of extinction.

FIGURE IV - 15

WILDLIFE POPULATIONS
GULF OF ALASKA REGION

Species	Population	Harvest				Remarks
		Average Yearly	Estimated Value	1958-1968 Trend	Probable Future Trend	
BIG GAME						
Deer	Abundant	850	85,000	Increase	Increase	
Moose	1,000	100	35,000	Increase	Increase	
Mountain Goat	2,000	150	45,000	Increase	Increase	
Black Bear	2,000	250	25,000	Increase	Increase	
Blue Bear	50	10	5,000	Static	Static	
Brown Bear	1,000	20	30,000	Increase	Increase	
FURBEARERS						
Beaver	Common	200	6,000	Increase	No change	
Lynx	Rare	Trace		Variable	No change	
Marten	Uncommon	Few	1,000	Static	No change	
Mink	Abundant	700	10,500	Static	No change	
Land Otter	Abundant	300	9,000	Static	No change	
Sea Otter	Common	0				
Weasel	Common	100	100	Static	No change	
Wolverine	Common	25	750	Increase	No change	
Red Fox	Uncommon	Few				
Coyote	Common	Few	500	Static	No change	
Wolf	Uncommon	Trace		Static	No change	
MARINE MAMMALS						
Harbor Seal	Common	1,500	22,500	Increase	No change	
WATERFOWL						
Ducks	100,000	20,000	62,000	Increase	No change	
Geese	25,000	5,000	23,000	Increase	No change	
Swans	700					
Other Mammals	Sea Lions (abundant), Whales (common)					
Other Birds	Bald Eagle (abundant), Shorebirds (common), Sea Birds (common)					

Source: U. S. Department of the Interior, Bureau of Sport Fisheries and Wildlife, Anchorage, Alaska.

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The wildlife resources of the area were beneficially enriched by the introduction of black-tail deer to the Prince William Sound area in the period of 1916-1923, and the introduction of moose to the Copper River Delta in the 1950's. These two species now sustain annual harvesting, both for meat and recreation.

Trophy hunting for bears and goats is becoming popular and the value of these species for recreational use is certain to increase.

Wildlife resources here, as in other parts of the state, have three principal values: 1) direct utilization for food and recreation, 2) commercial utilization, and 3) attraction to tourists. It is even apparent that the number and distribution of people within the region has been and still is partially related to the availability of various species of wildlife. Thus, these resources are of much significance to Alaskans and will become more so in the future.

During the season of reproduction, the Copper River Delta supports the total breeding population of dusky Canada geese and a substantial number of breeding trumpeter swans. The welfare of these birds in addition to other migratory birds and the bald eagle are of national, even international, concern.

SOUTHEAST REGION

The fauna of the Southeast Region of Alaska is rich and varied both on land and in the sea. Large land mammals include deer, moose, goats, and brown, black and glacier bears. Furbearing animals present in the region include mink, marten, weasel, land otter, muskrat, wolf, coyote, fox, lynx, marmot, squirrel and raccoon (introduced). Marine mamals include the harbor seal, elephant seal (rare summer visitor), sea lion, sea otter (recently introduced after early extirpation of native stocks), Dall and harbor porpoises, and several species of larger whales.

Prominent birds include the bald eagle, raven, crow, gulls of several species, ptarmigan, ducks and geese of many species, whistling and trumpeter swans, crane, shorebirds and sea birds of various kinds.

The history of resource utilization in the Southeast Region is marked by four major phases which may arbitrarily be designated as follows; 1) aboriginal phase, 2) colonization phase, 3) commercial fishery phase, and 4) recent developmental phase.

During the aboriginal phase which predates the introduction of foreign influences, the Native culture was oriented primarily toward marine resources which could be easily harvested without devices such as fire arms. Fish and marine invertebrates were basic food sources supplemented by berries, birds and the flesh of both land and marine mammals. Because of the mild and extremely damp climate, furs were not of major importance for clothing as compared to the colder, more northerly regions of Alaska. Total resource utilization was not intensive relative to the high biological productivity of the region and the people enjoyed an abundance of all resources essential to their livelihood.

The colonization phase saw the introduction of many cultural advances and the first significant commercialization of certain species, primarily sea otter, fur seal, and other furbearing animals. During this era, the sea otter was hunted to extinction.

The introduction of muskets and iron implements permitted more efficient hunting efforts and aided in the harvest of a variety of wildlife such as seals, goats and bears which were difficult to capture regularly by primitive means. Still, by force of Native tradition and easy availability, major reliance for food continued to be placed on fish and other marine forms. The European population remained scant and largely transitory, placing small demand on the region's food resources. The principal effect of Europeans was to stimulate the Natives in the commercial pursuit of fur animals.

The commercial fishery phase, which commenced in the 1880's, saw a revolutionary change in resource utilization. Salmon canneries were built and commercial fishing and related endeavors provided a seasonal economic supplement for the resident population. Fur trapping involving primarily mink, marten, and land otter, also developed into an important seasonal activity under the influence of dependable marketing or trading opportunities. All native peoples felt the effects of these new economic elements and a trend away from subsistence economies developed throughout the region.

The recent developmental phase has involved a diversified and managed development of many resources. Timber, minerals, water power, as well as fishery and fur resources are being utilized. Most food is now imported, although fish and game still provide much of the meat requirements outside the larger cities.

With a lessened dependence on wildlife resources for subsistence utilization, hunting for sport has developed as a favored recreational pursuit enjoyed by a major part of the population as well as many visitors.

The wildlife resources of the region make a substantial contribution to the state in several ways. The deer harvest of 12-14,000 animals each year is entirely utilized as human food and represents the major meat source of people residing outside the few larger communities. Other big game animals attract sportsmen, both residents and non-residents, who expend money to the direct benefit of local economies. Fur trapping and seal hunting provide a continuing source of winter income on a sustaining basis for many residents in the outlying villages and augment the fishing related earnings of the summer season. Wildlife also greatly enriches the wilderness aspect of the region from the standpoint of tourist appeal and thus contributes much to the rapidly expanding tourist industry.

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FURBEARERS
Beaver
Muskrat
Lynx
Marten
Mink
Land Otter
Sea Otter
Weasel
Wolverine
Red Fox
Coyote
Wolf
MARINE MAMMALS
Harbor Seal
WATERFOWL
Ducks
Geese
Swans
Other Mammals Se
Other Birds

Source: U. S.
Ancho

The Southeast Region of Alaska is the most readily accessible part of the state, being served by airlines and ferries from the state of Washington and the Province of British Columbia. As such, its wilderness and wildlife resources are tremendous attractions to tourists who are seeking exposure to a primitive environment and its recreational opportunities.

Three small National Wildlife Refuges have been established in this region for the protection of colonial nesting sea birds. These refuges are Forrester Island (2,800 acres), Hazy Islands (42 acres), and St. Lazaria Island (65 acres). Also in this region is the Stikine Flats which is an important waterfowl resting and feeding area for spring and fall migrants; large numbers of snow geese congregate here each fall.

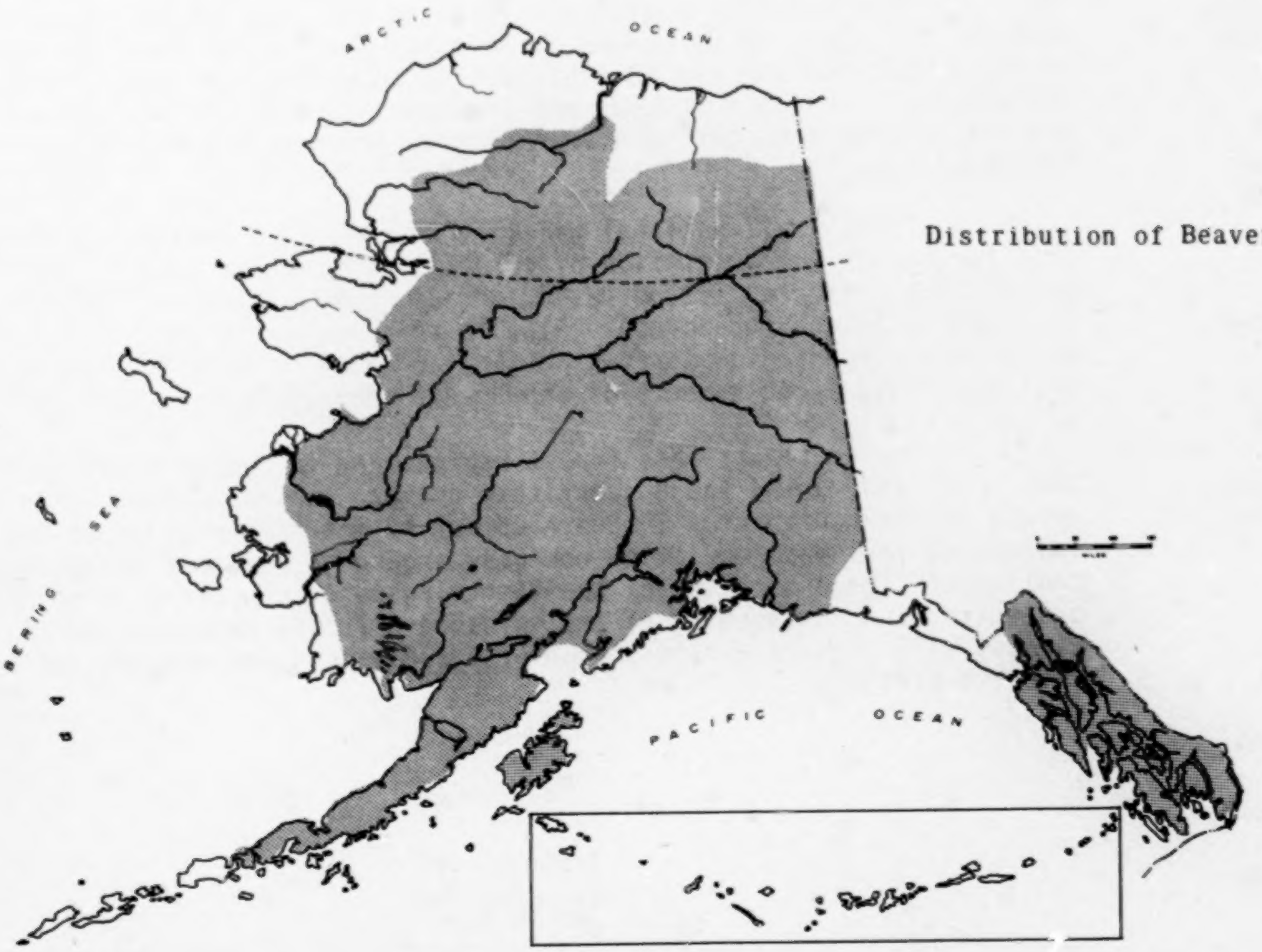
The southeast rain forest habitat and inland waterways with their rich and varied fauna constitute a great national legacy that is unique on the continent. The development of the timber industry and the increasing resident population now pose a genuine resource management challenge. The proper use of the timber resource concurrent with the protection and enhancement of the valuable wildlife resource and its habitat will require a high degree of coordination and cooperation by resource managers.

FIGURE IV - 16

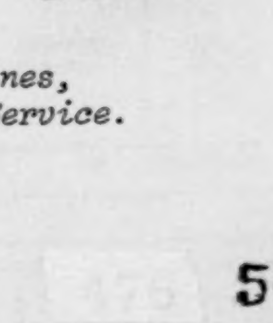
WILDLIFE POPULATIONS
SOUTHEAST REGION

Species	Population	Harvest				Remarks
		Average Yearly	Estimated Value	1958-1968 Trend	Probable Future Trend	
BIG GAME						
Deer	Abundant	14,000	2,100,000	Increase	Increase	
Moose	5,000	500	175,000	Static	No change	
Mountain Goat	6,000	250	75,000	Static	Increase	
Black Bear	8,000	200	20,000	Static		
Brown Bear	4,000	100	150,000	Increase	Increase	
FURBEARERS						
Beaver	Common	400	8,000	No change	No change	
Muskrat	Uncommon	Trace		No change	No change	
Lynx	Rare	Trace		No change	No change	
Marten	Common	2,000	20,000	No change	No change	
Mink	Abundant	6,000	60,000	No change	No change	
Land Otter	Abundant	2,000	80,000	No change	No change	
Sea Otter	Rare			No change	No change	
Weasel	Common	1,000	1,000	No change	No change	
Wolverine	Common	50	1,500	No change	No change	
Red Fox	Rare	Trace		No change	No change	
Coyote	Uncommon	Trace		No change	No change	
Wolf	Common	150	11,200	No change	No change	
MARINE MAMMALS						
Harbor Seal	Common	3,000	30,000	Increase	No change	
WATERFOWL						
Ducks	Abundant	10,000	31,000	Increase	Increase	
Geese	Abundant	1,000	46,000	Increase	Increase	
Swans	Abundant					
Other Mammals	Sea Lions, Whales, Bald Eagles (Abundant)					
Other Birds						

Source: U. S. Department of the Interior, Bureau of Sport Fisheries and Wildlife, Anchorage, Alaska.


ARCTIC OCEAN
BERING SEA
PACIFIC OCEAN
MILES

Distribution of Beaver

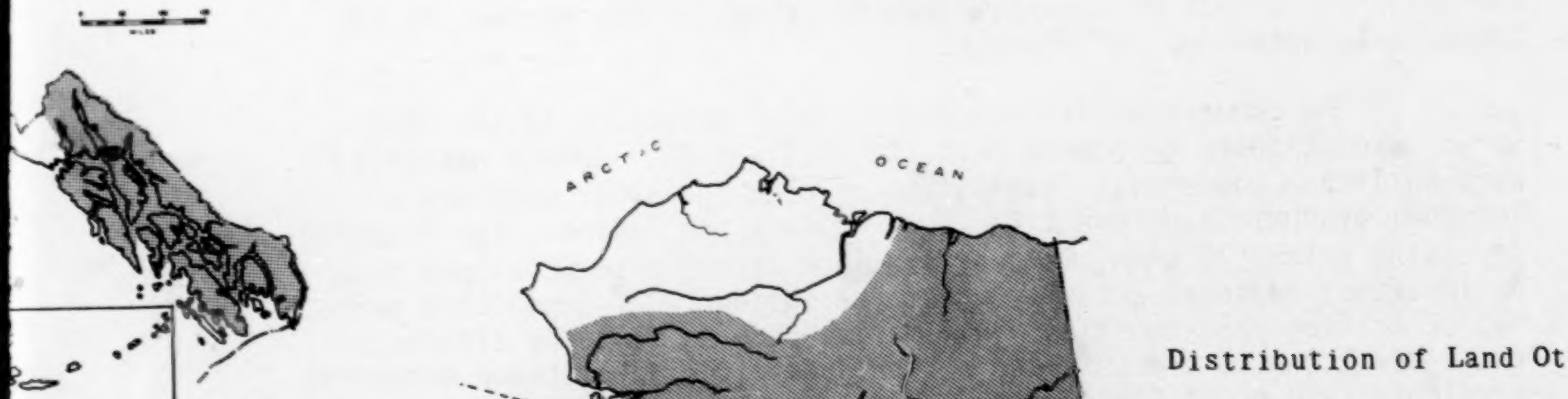


Animal sketches by Bob Hines,
U. S. Fish and Wildlife Service.

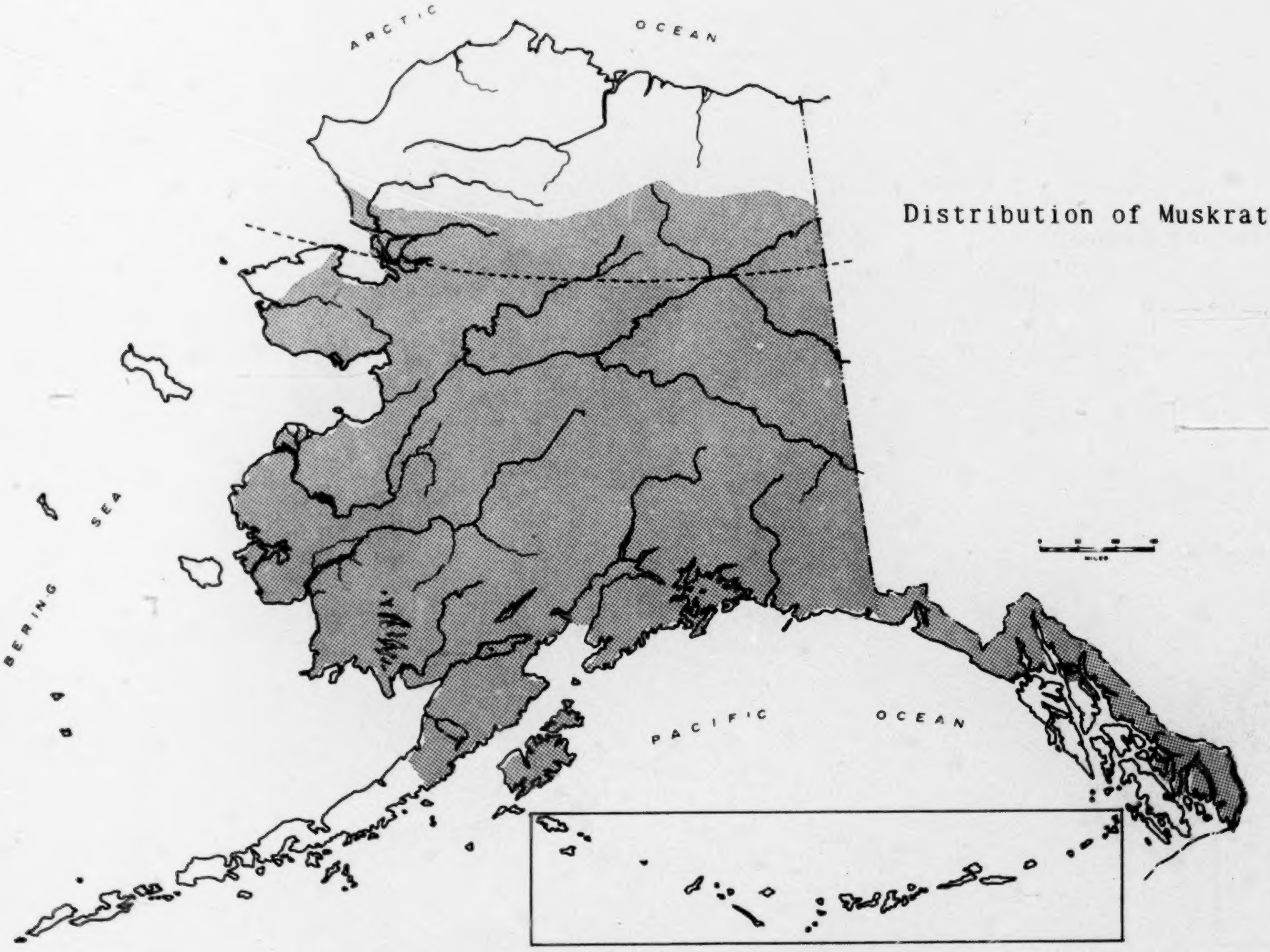
FIGURE IV - 17: Distribution of Alaska Wildli

tribution of Beaver

Distribution of Land Otter


ARCTIC OCEAN
PACIFIC OCEAN
ERING SEA
MILES

tribution of Alaska Wildlife - Beaver, Land Otter

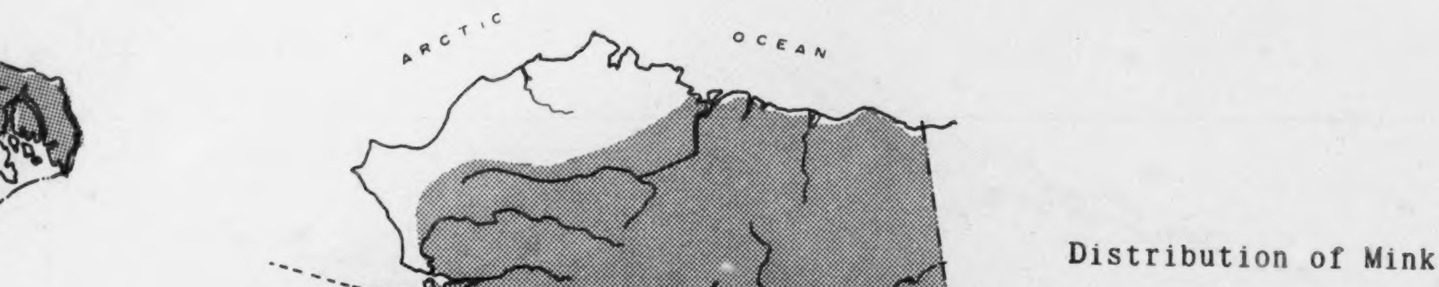

ARCTIC OCEAN
BERING SEA
PACIFIC OCEAN

Distribution of Muskrat

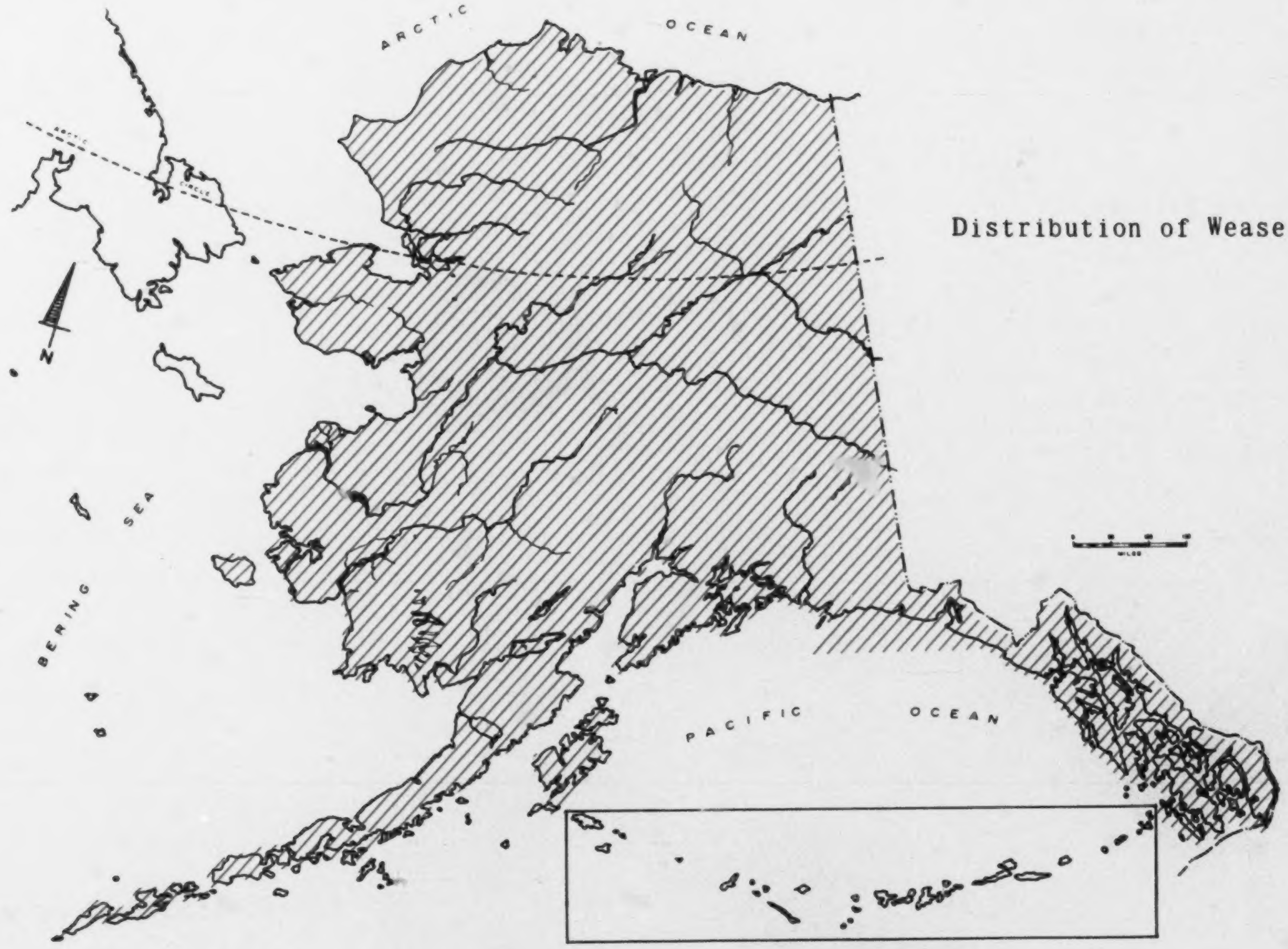
FIGURE IV - 18: Distribution of Alaska Wildlife -

tion of Muskrat

Distribution of Mink


ARCTIC
OCEAN
BERING
SEA
PACIFIC
OCEAN
MILES

bution of Alaska Wildlife - Muskrat, Mink


ARCTIC OCEAN
ARCTIC CIRCLE
N
BERING SEA
PACIFIC OCEAN
MILES

Distribution of Weasel

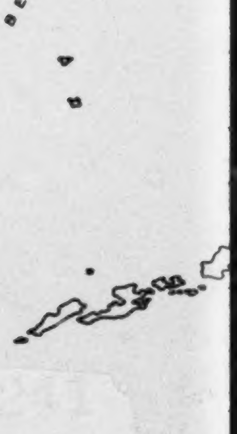
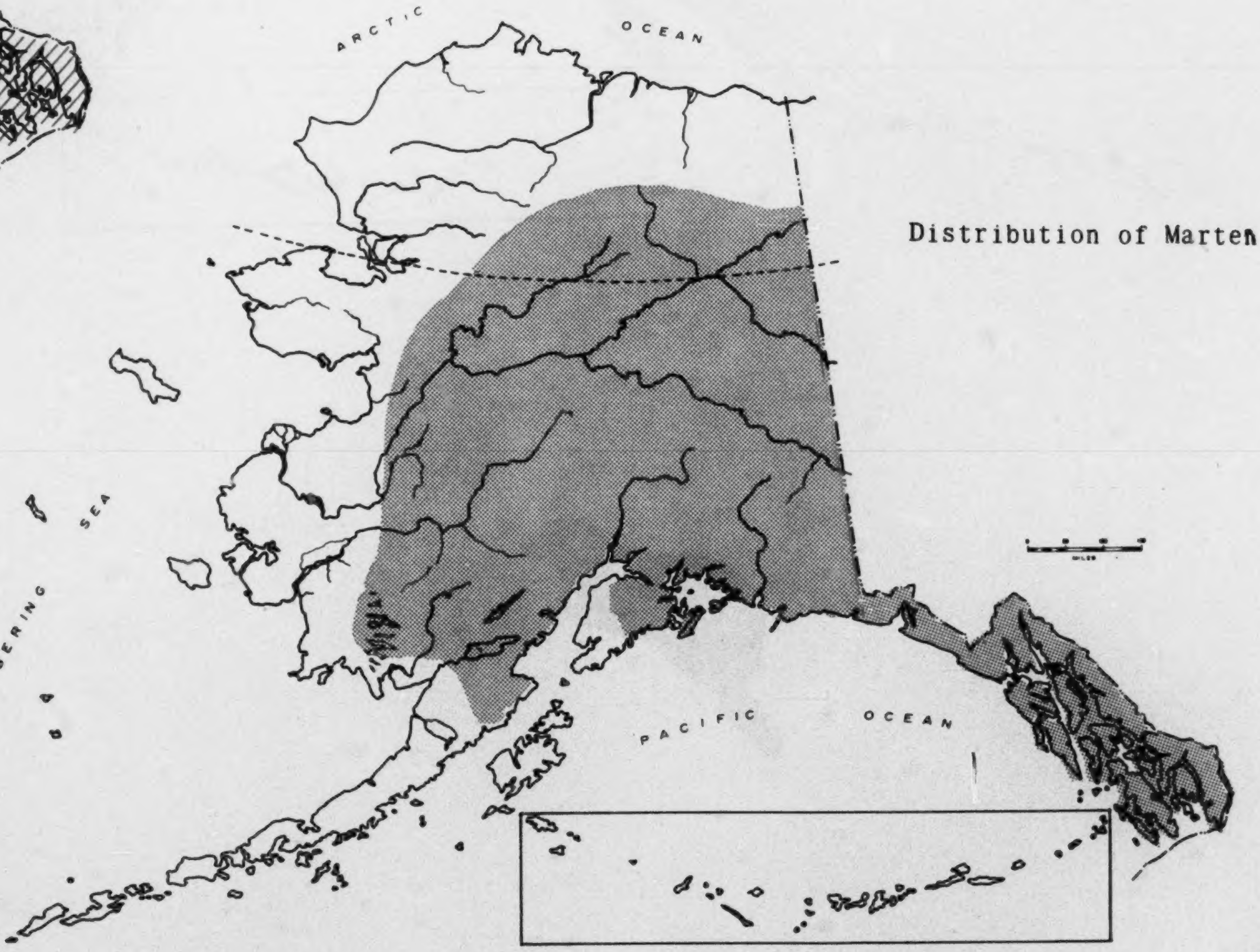


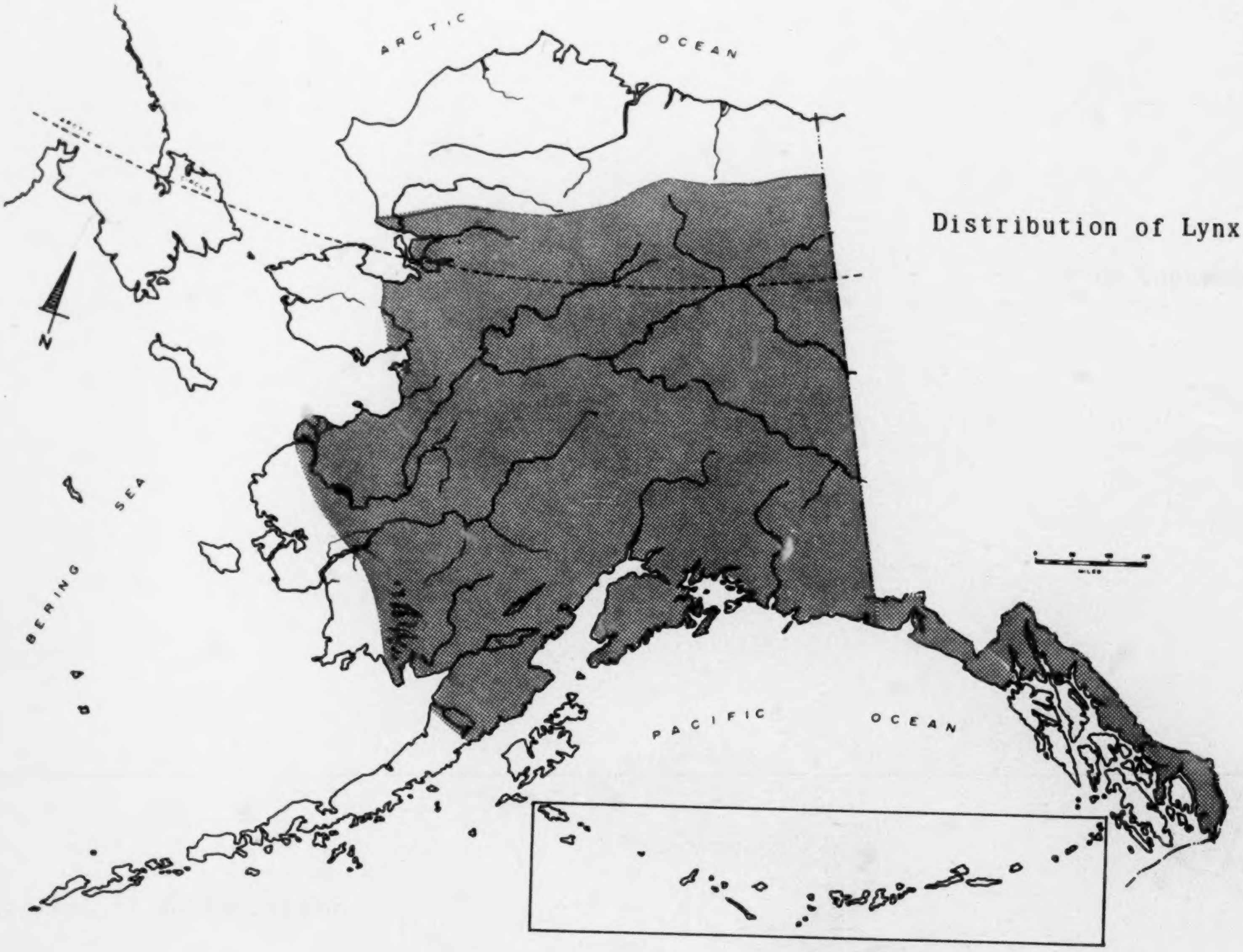
FIGURE IV - 19: Distribution of Alaska Wi

istribution of Weasel


ARCTIC
OCEAN
BERING
SEA
PACIFIC
OCEAN

Distribution of Marten

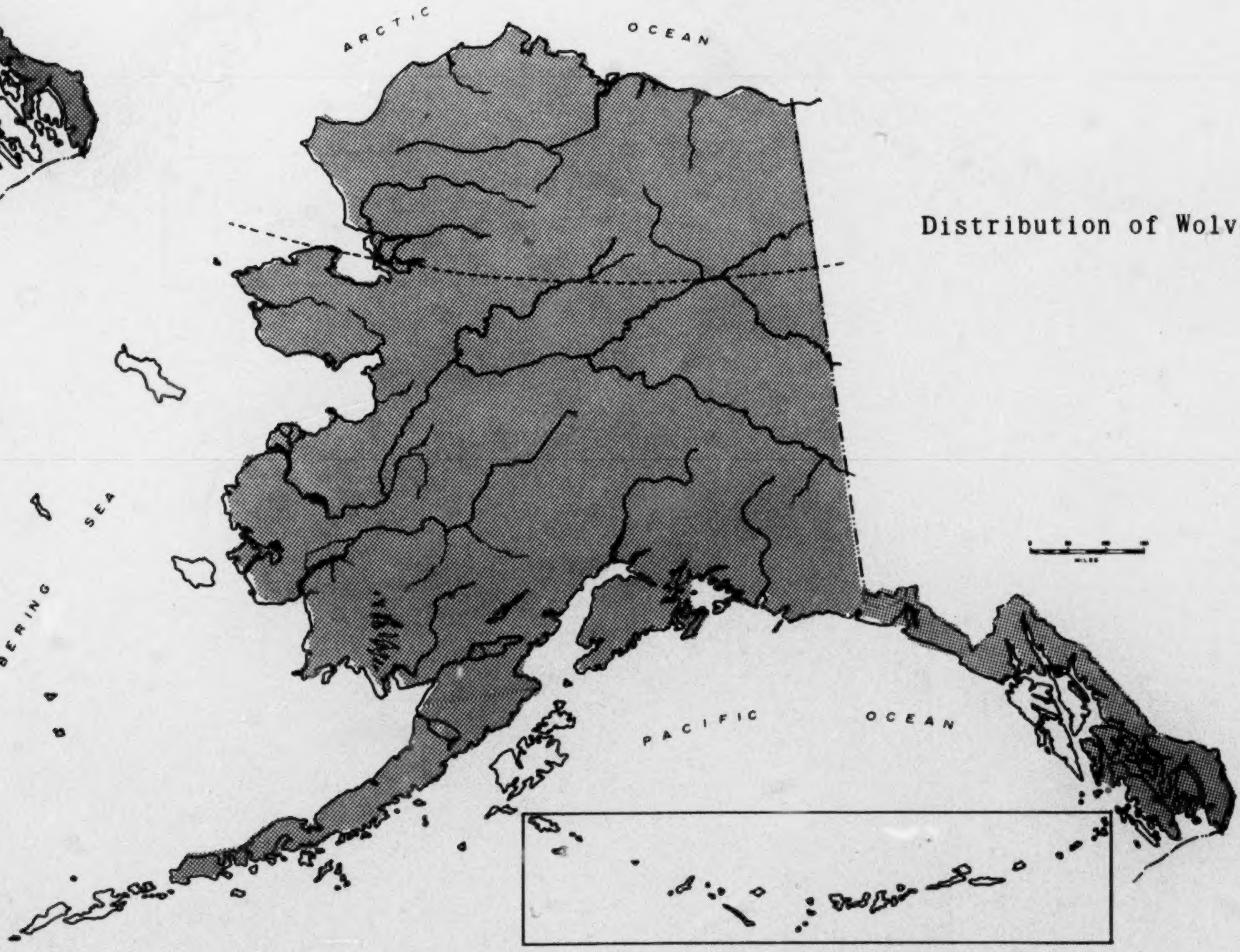
Distribution of Alaska Wildlife - Weasel, Marten


ARCTIC
OCEAN
BERING
SEA
PACIFIC
OCEAN
MILES

Distribution of Lynx

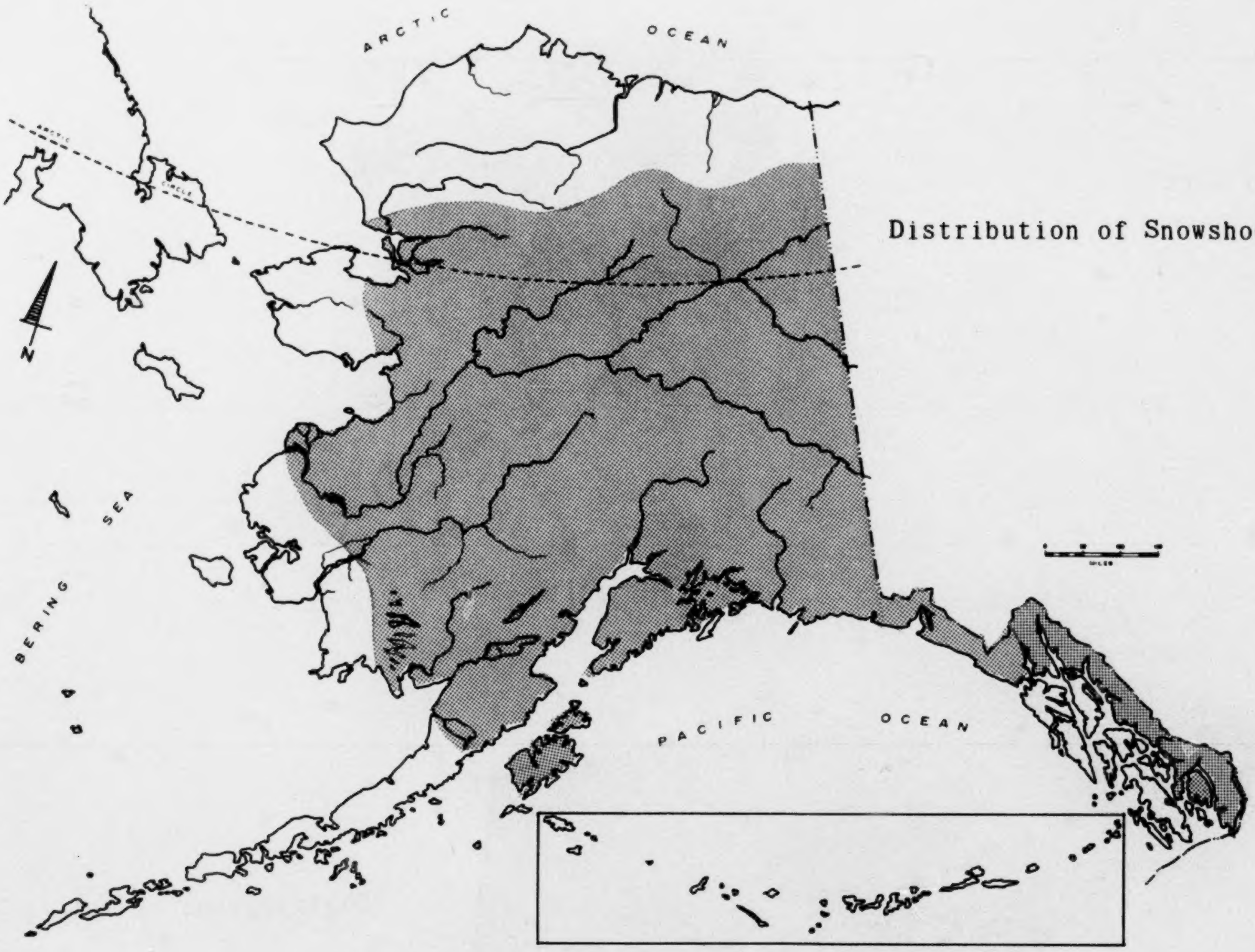
FIGURE IV - 20; Distribution of Alaska Wildlife -

istribution of Lynx


ARCTIC
OCEAN
BERING
SEA
PACIFIC
OCEAN
MILES

Distribution of Wolverine

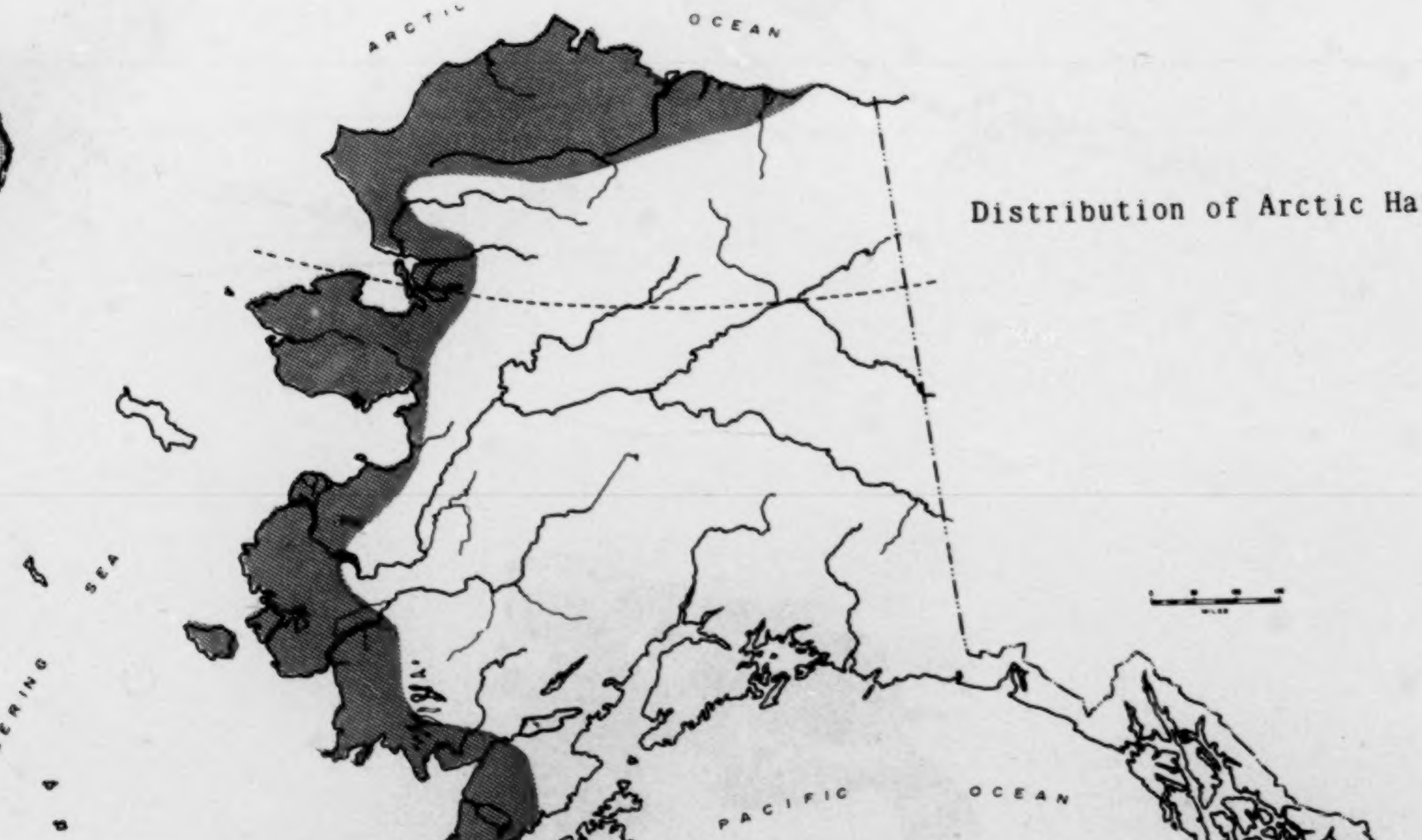
Distribution of Alaska Wildlife - Lynx, Wolverine


ARCTIC OCEAN
ARCTIC CIRCLE
N
BERING SEA
PACIFIC OCEAN
MILES

Distribution of Snowshoe Hare

FIGURE IV - 21: Distribution of Alaska Wildlife

f Snowshoe Hare


ARCTIC OCEAN
BERING SEA
PACIFIC OCEAN
MILES

Distribution of Arctic Hare

of Alaska Wildlife - Snowshoe hare, Arctic hare

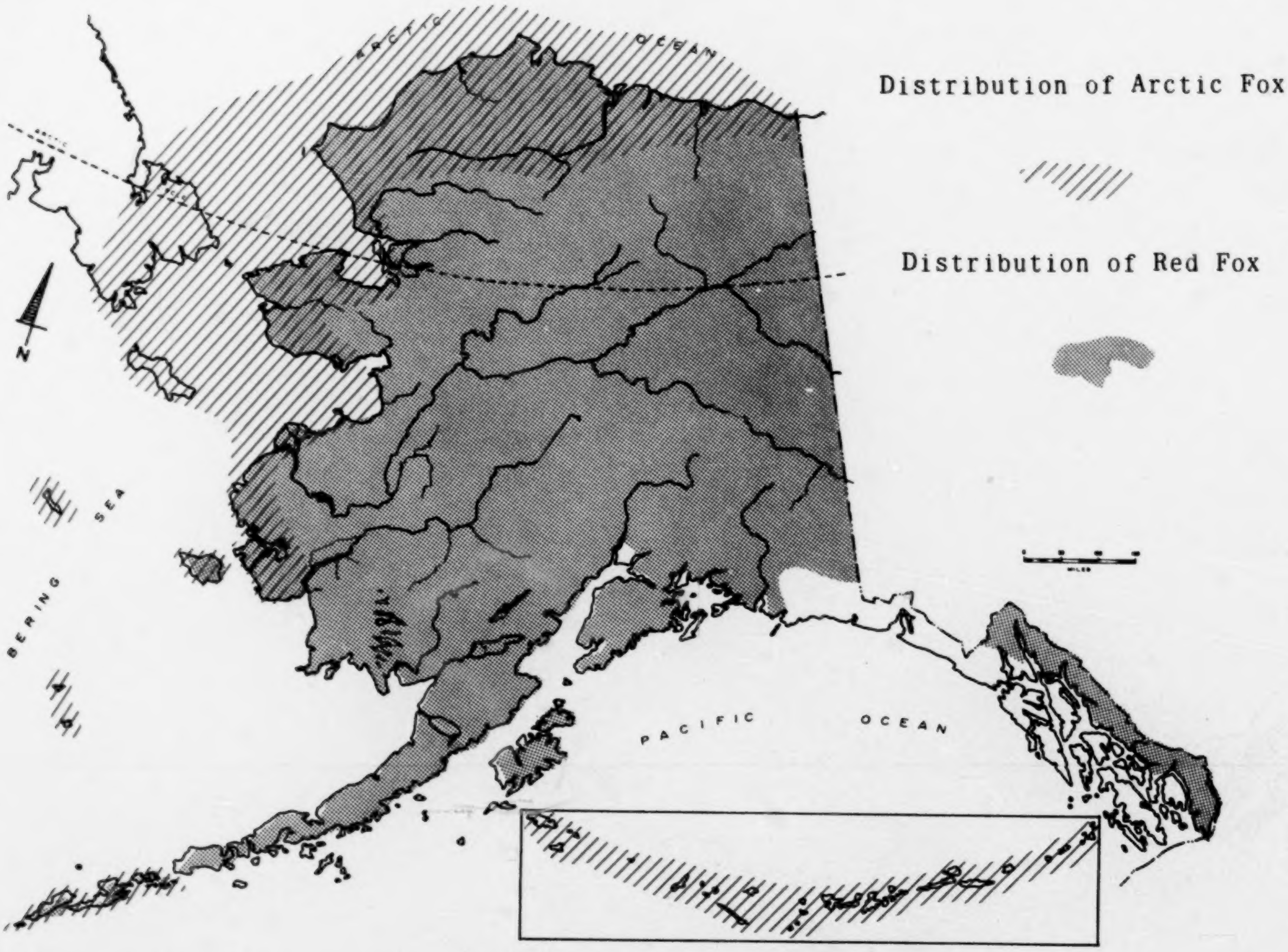
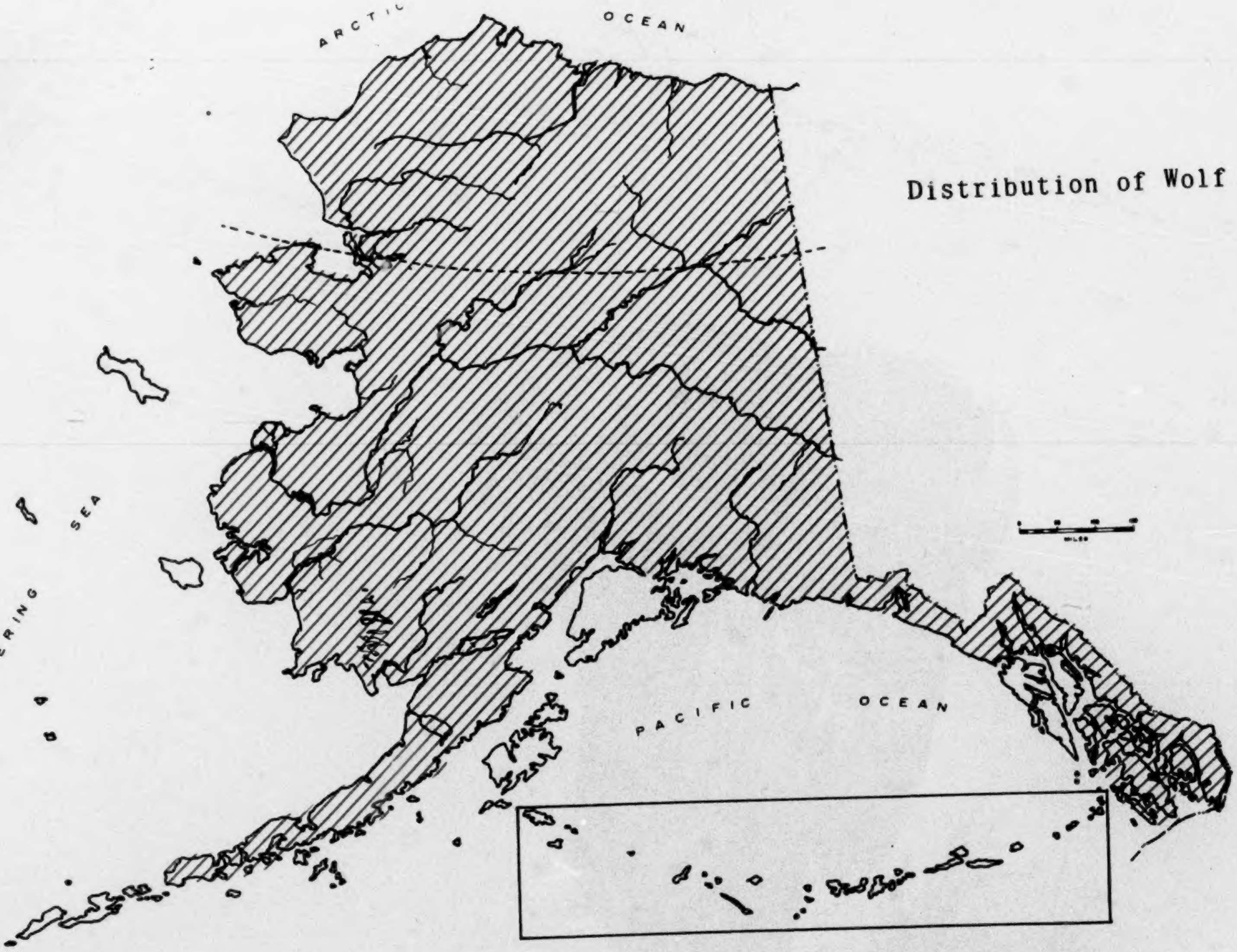

ARCTIC OCEAN
Distribution of Arctic Fox
Distribution of Red Fox
BERING SEA
PACIFIC OCEAN
MILES
N

FIGURE IV - 22: Distribution of Alaska Wildlife - Red of Arctic Fox

▨

of Red Fox


ARCTIC
OCEAN
BERING
SEA
PACIFIC
OCEAN

Distribution of Wolf

of Alaska Wildlife - Red and Arctic Fox, Wolf

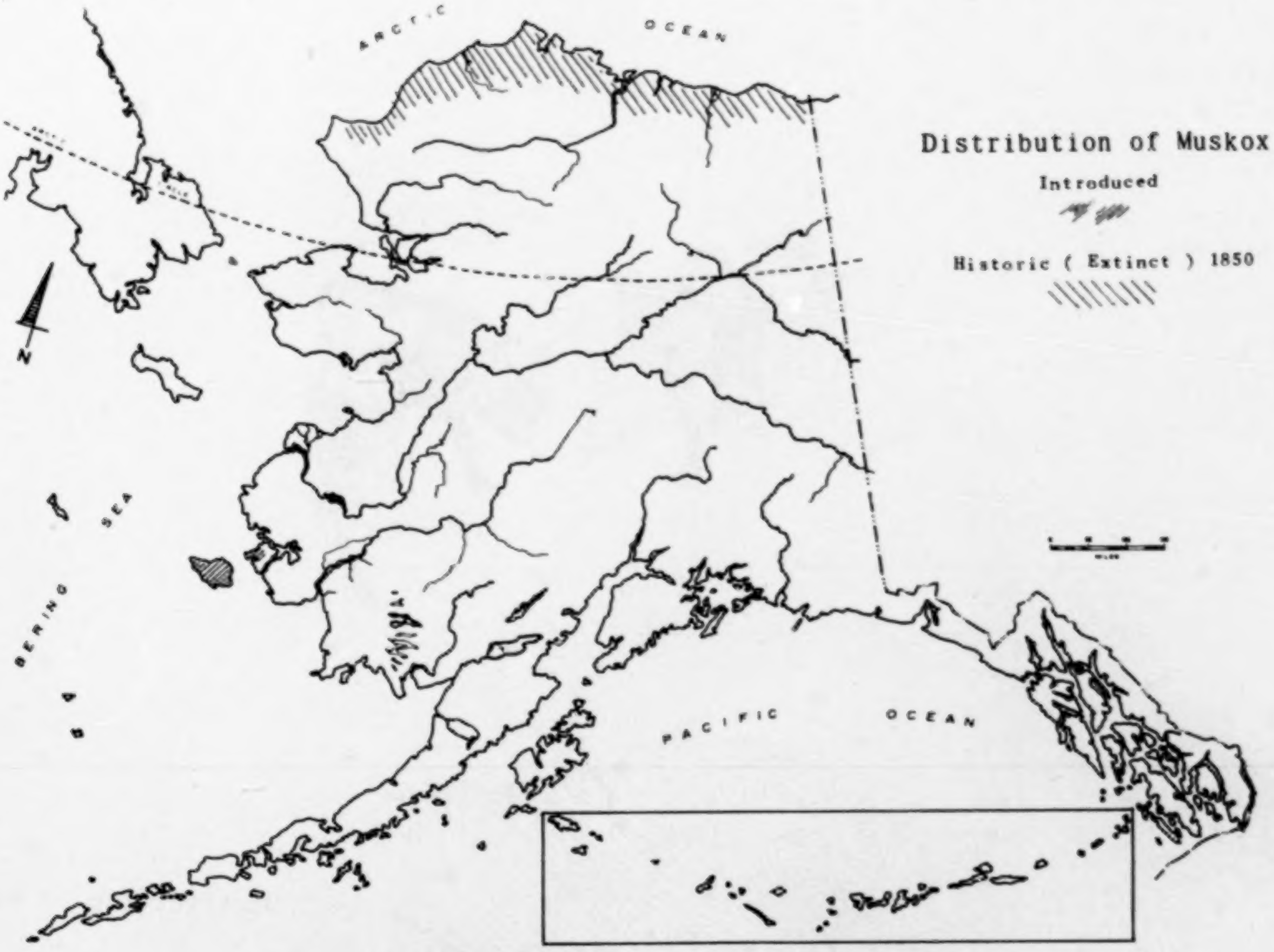
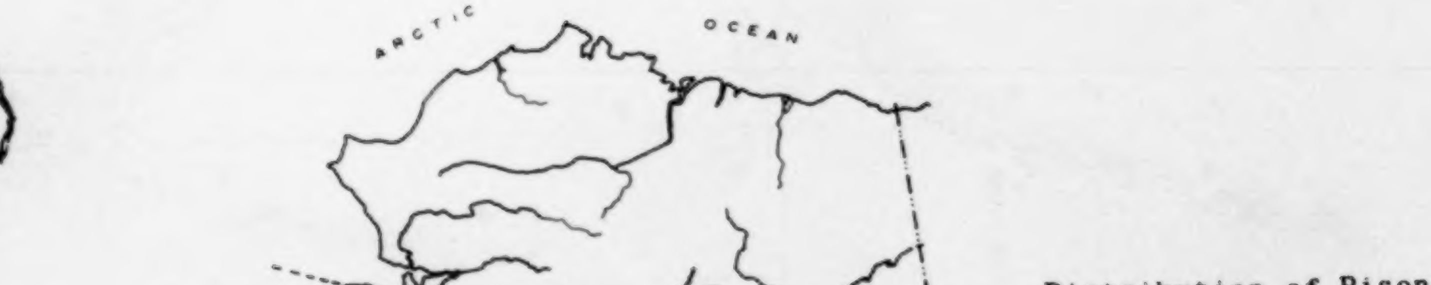

ARCTIC OCEAN
Distribution of Muskox
Introduced
Historic (Extinct) 1850
N
BERING SEA
PACIFIC OCEAN

FIGURE IV - 23: Distribution of Alaska W

n of Muskox

duced

Extinct) 1850


ARCTIC
OCEAN
BERING
SEA
PACIFIC
OCEAN

Distribution of Bison

(Introduced)

ribution of Alaska Wildlife - Muskox, Bison

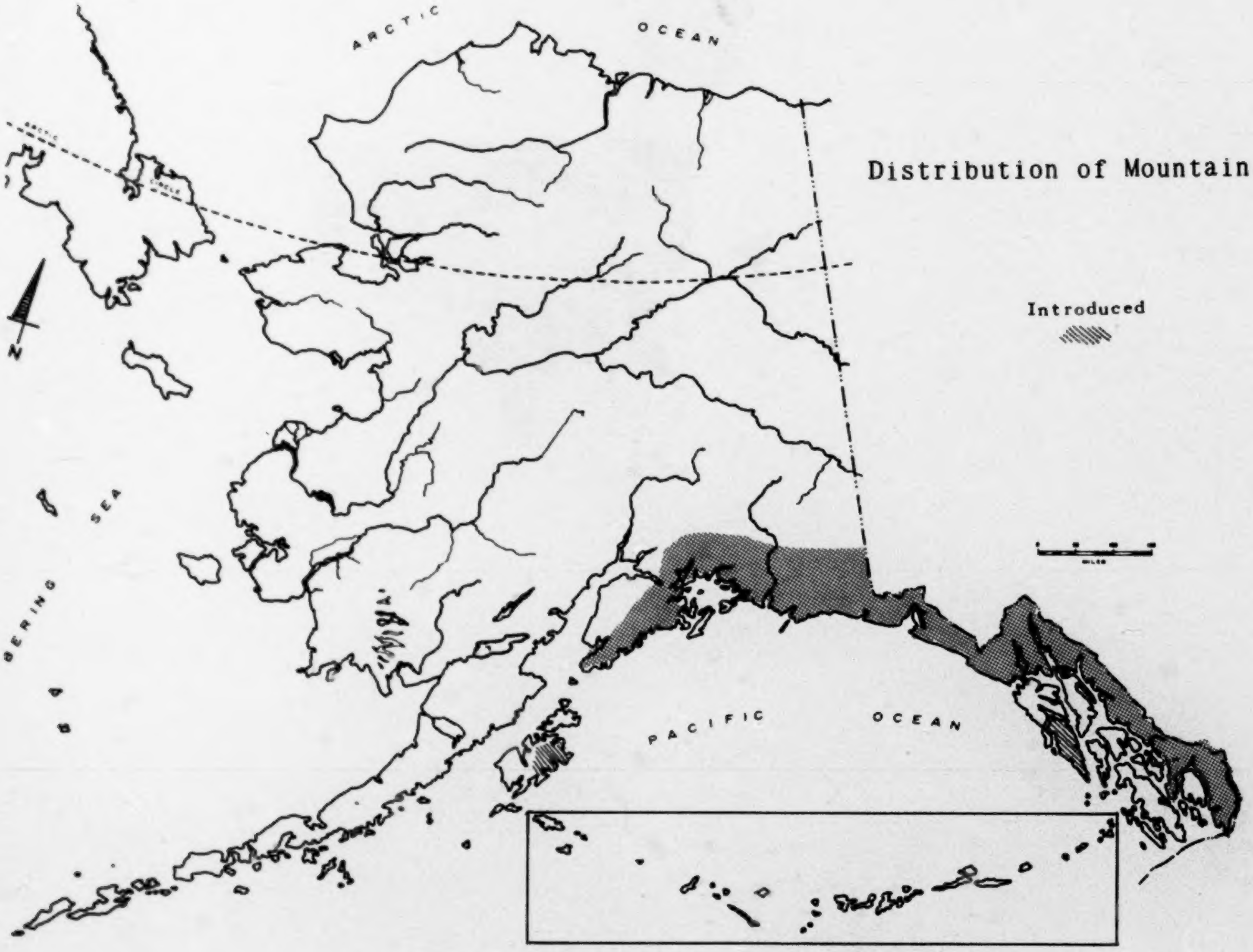
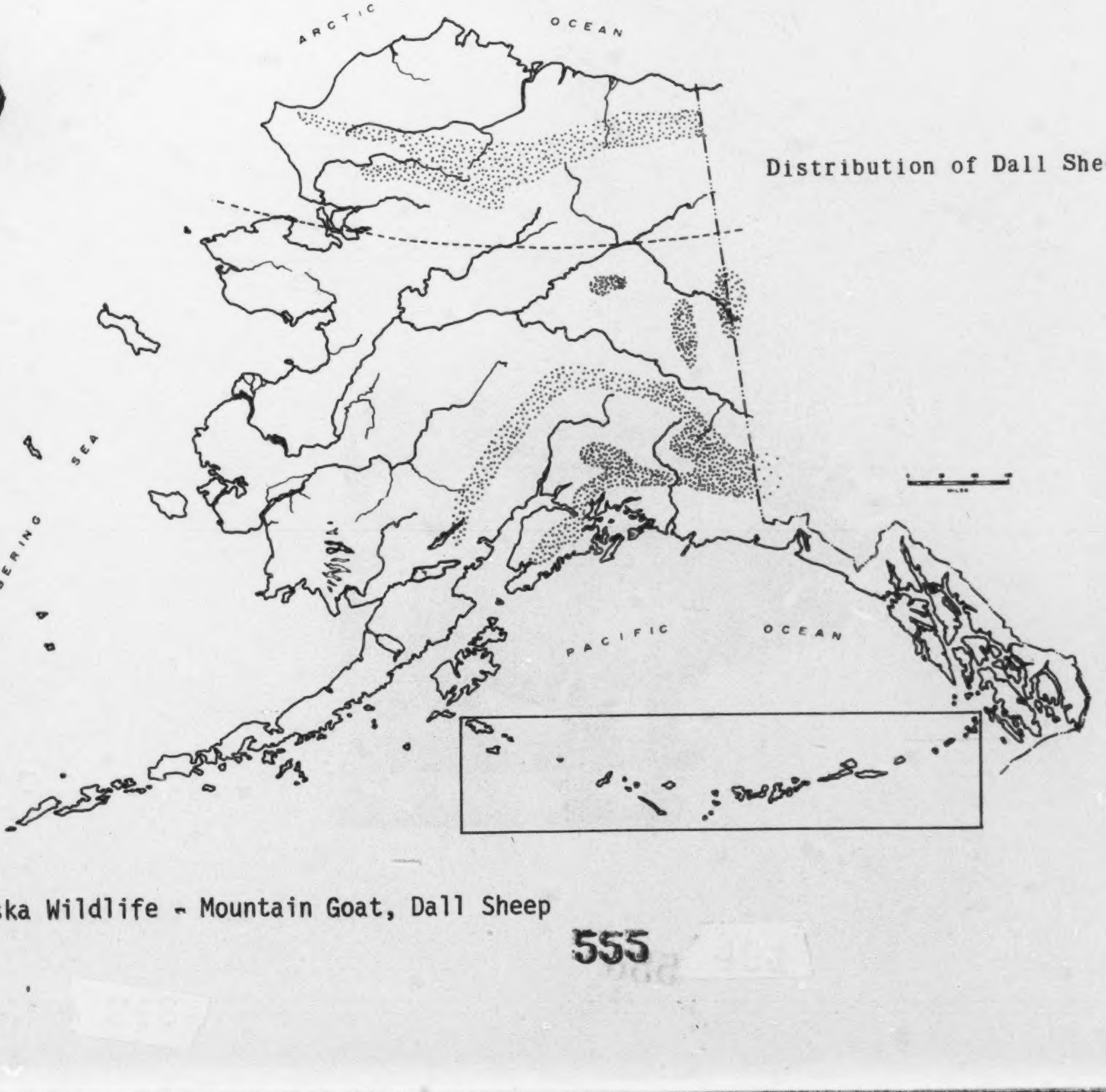

ARCTIC
OCEAN
ARCTIC CIRCLE
Distribution of Mountain Goat
Introduced
▨
N
BERING
SEA
PACIFIC
OCEAN
MILES

FIGURE IV - 24: Distribution of Alaska Wildlife - Mount

n of Mountain Goat

troduced


ARCTIC
OCEAN
BERING
SEA
PACIFIC
OCEAN

Distribution of Dall Sheep

tion of Alaska Wildlife - Mountain Goat, Dall Sheep

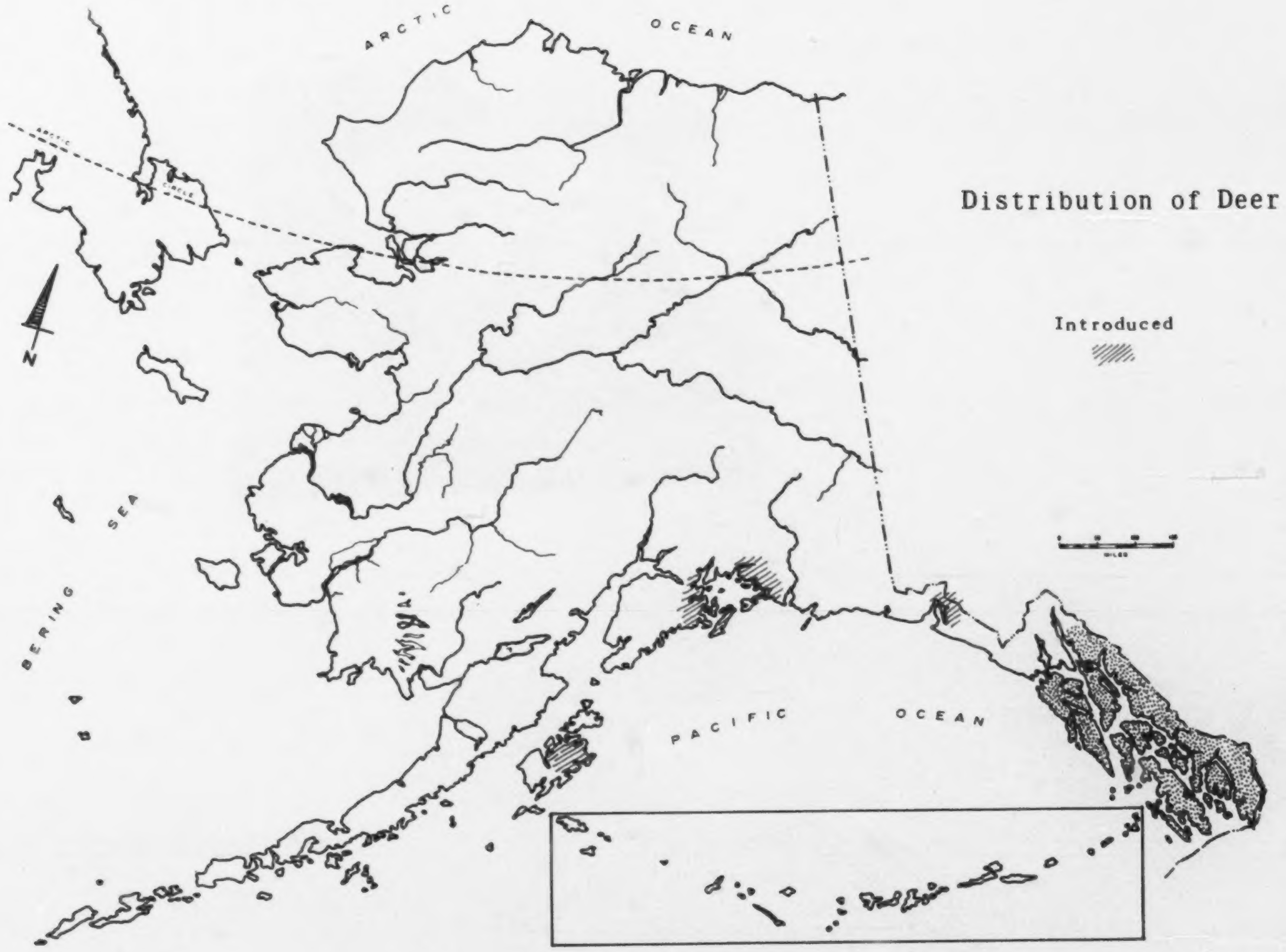
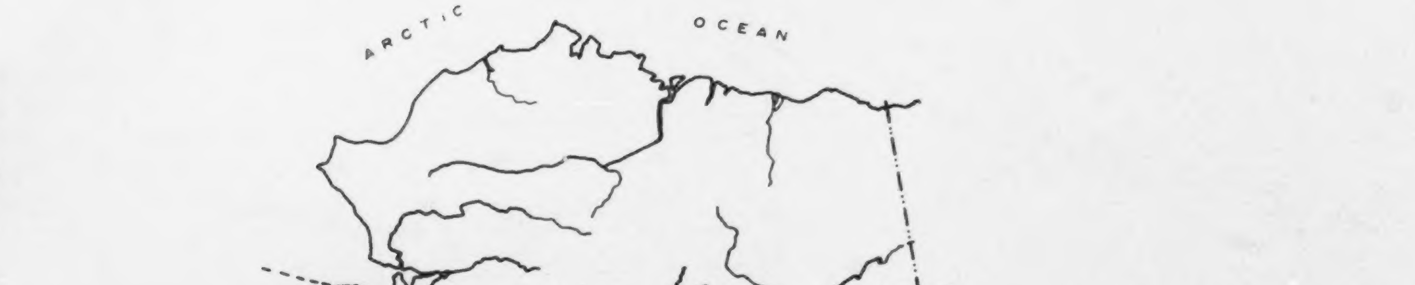

ARCTIC OCEAN
ARCTIC CIRCLE
Distribution of Deer
Introduced
▨
N
BERING SEA
PACIFIC OCEAN
MILES

FIGURE IV - 25: Distribution of Alaska

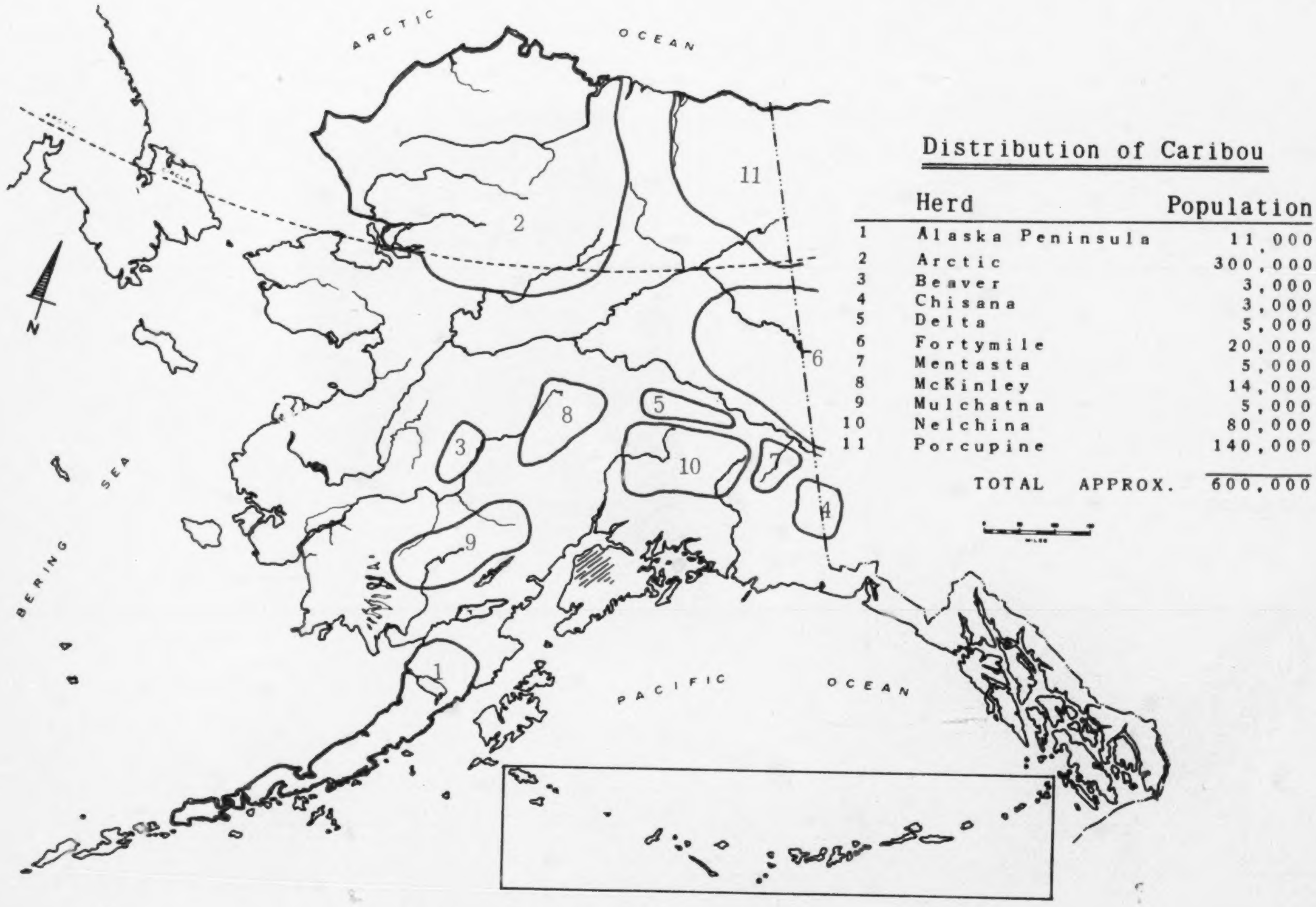
bution of Deer

Introduced ▨


ARCTIC OCEAN
BERING SEA
PACIFIC OCEAN

Distribution of Elk
(Introduced)

Distribution of Alaska Wildlife - Deer, Elk


ARCTIC
OCEAN
PACIFIC
OCEAN
BERING
SEA
N
1
2
3
4
5
6
7
8
9
10
11

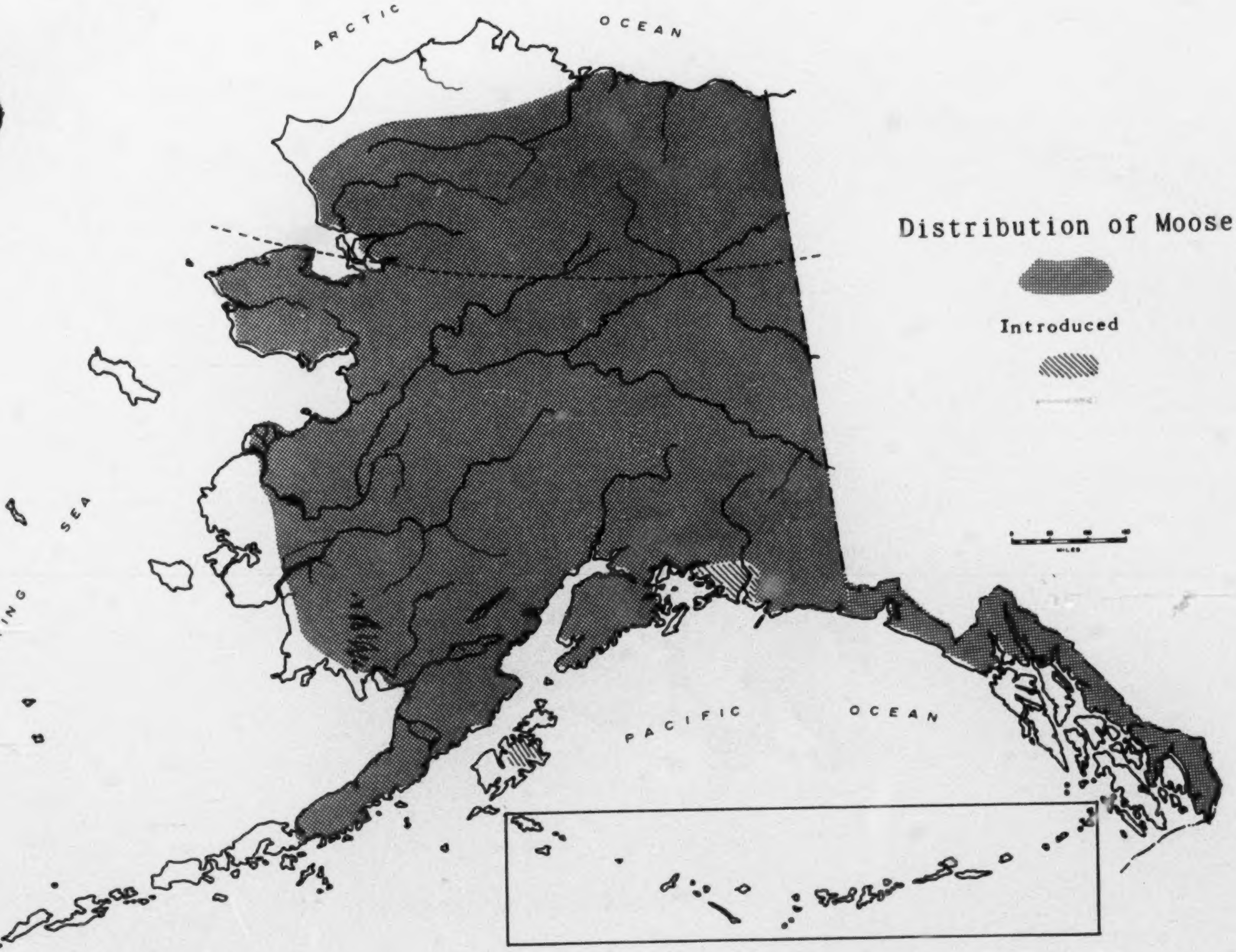
Distribution of Caribou

	Herd	Population
1	Alaska Peninsula	11,000
2	Arctic	300,000
3	Beaver	3,000
4	Chisana	3,000
5	Delta	5,000
6	Fortymile	20,000
7	Mentasta	5,000
8	McKinley	14,000
9	Mulchatna	5,000
10	Nelchina	80,000
11	Porcupine	140,000
	TOTAL APPROX.	600,000

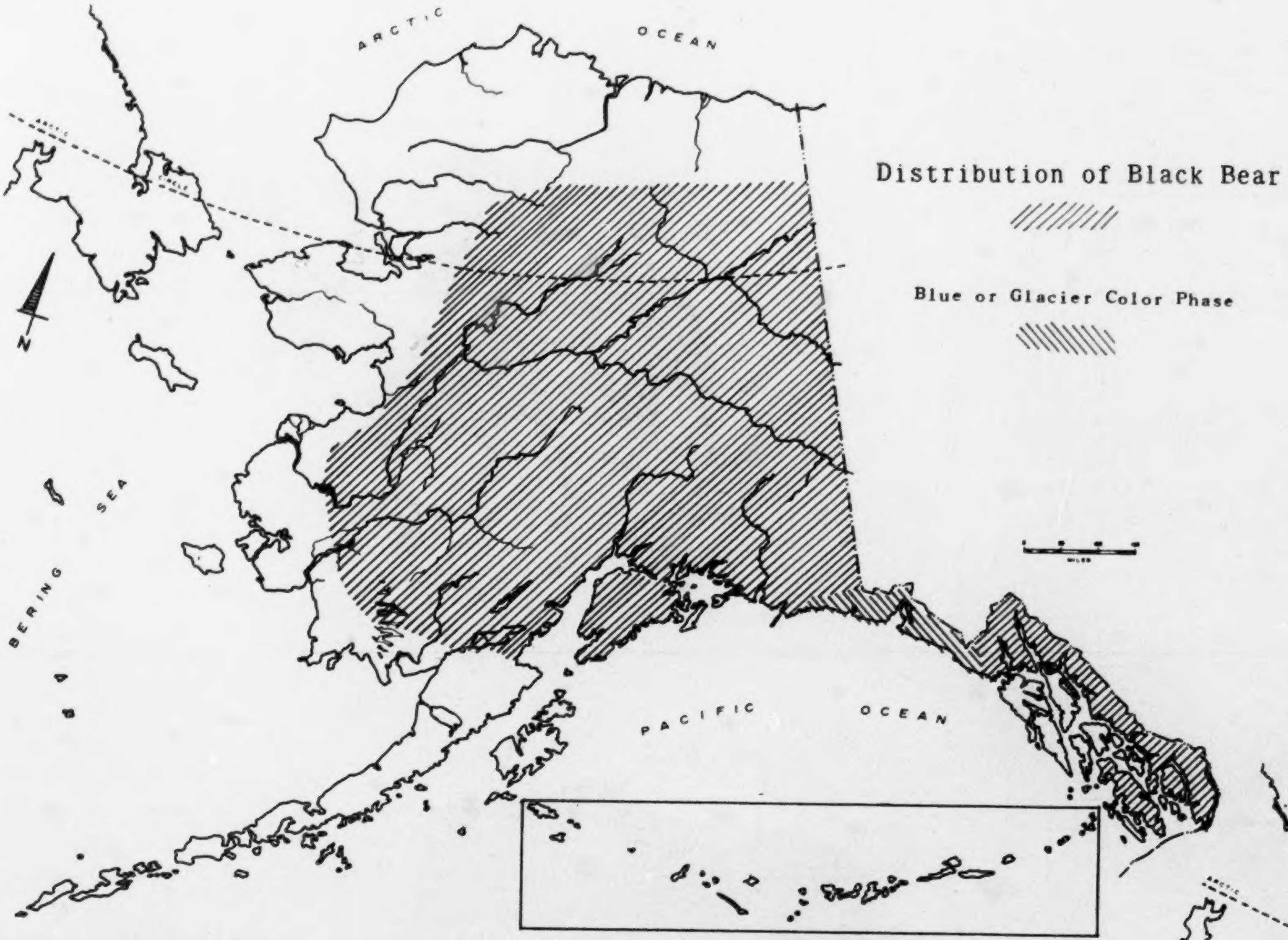
FIGURE IV - 26: Distribution of Alaska Wildlife -

bution of Caribou

	Population
Peninsula	11,000
	300,000
	3,000
a	3,000
	5,000
ile	20,000
ta	5,000
ey	14,000
tna	5,000
na	80,000
ine	140,000
TAL APPROX.	600,000


ARCTIC
OCEAN
Distribution of Moose
Introduced
SEA
BERING
PACIFIC
OCEAN

ribution of Alaska Wildlife - Caribou, Moose


ARCTIC OCEAN
ARCTIC CIRCLE
Distribution of Black Bear
Blue or Glacier Color Phase
MILES
BERING SEA
PACIFIC OCEAN

ARCTIC CIRCLE
N
BERING SEA

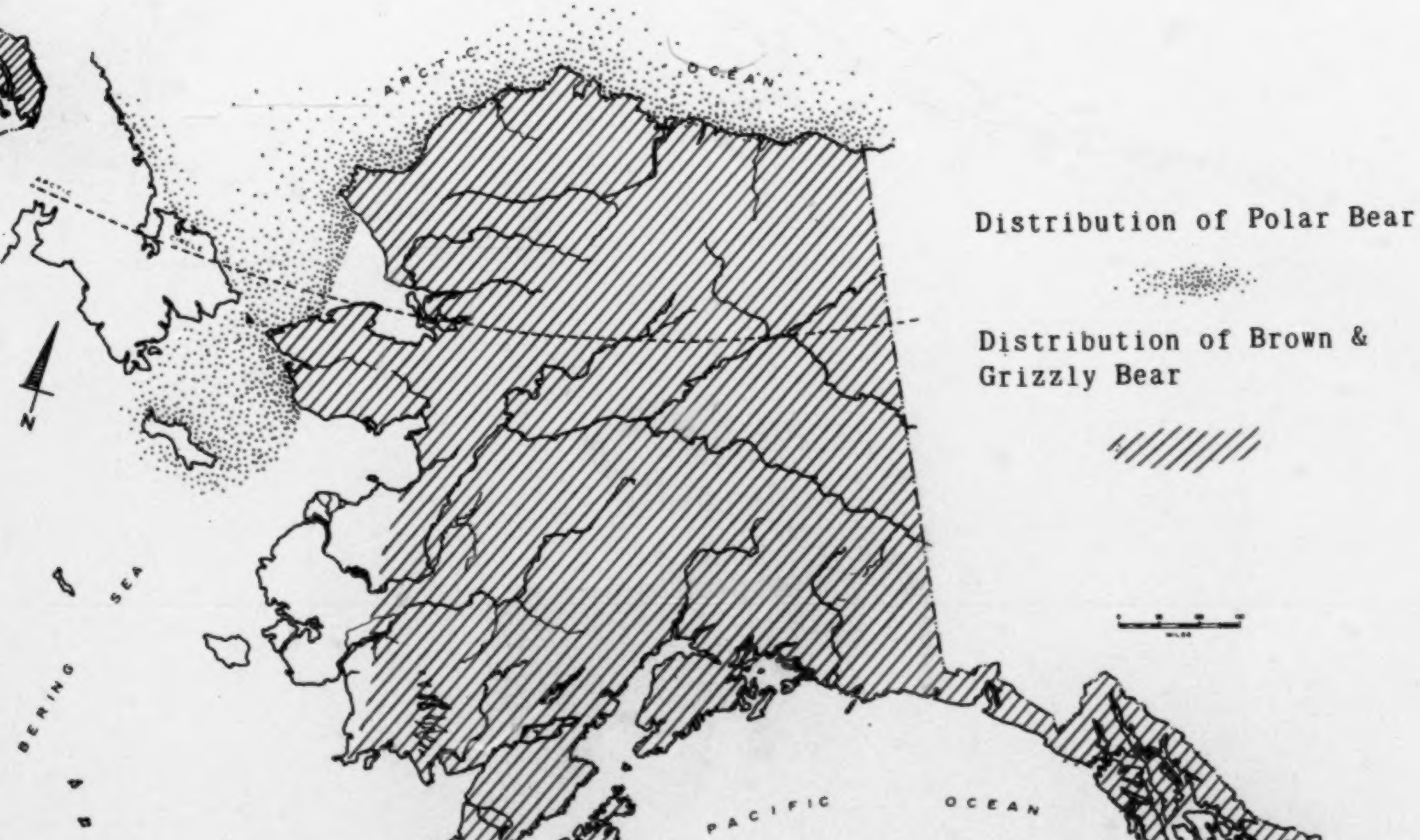
FIGURE IV - 27: Distribution of Alaska Wildlife - Bl

of Black Bear

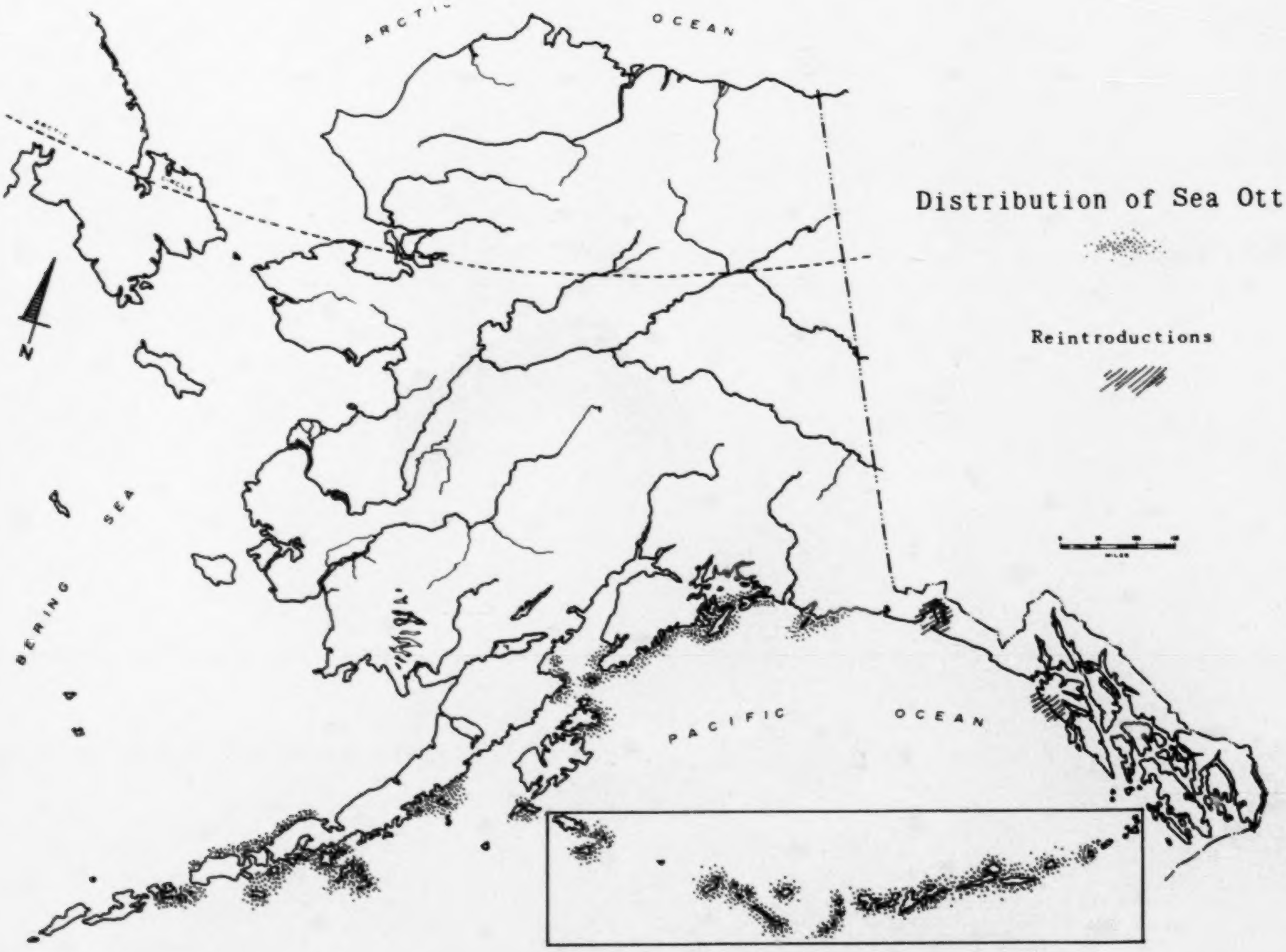
////

er Color Phase

\\\\


ARCTIC OCEAN
N
BERING SEA
PACIFIC OCEAN
Distribution of Polar Bear
Distribution of Brown & Grizzly Bear
MILES

of Alaska Wildlife - Black, Polar, Brown, Grizzly Bear


ARCTIC OCEAN
N
BERING SEA
PACIFIC OCEAN
Distribution of Sea Otter
Reintroductions

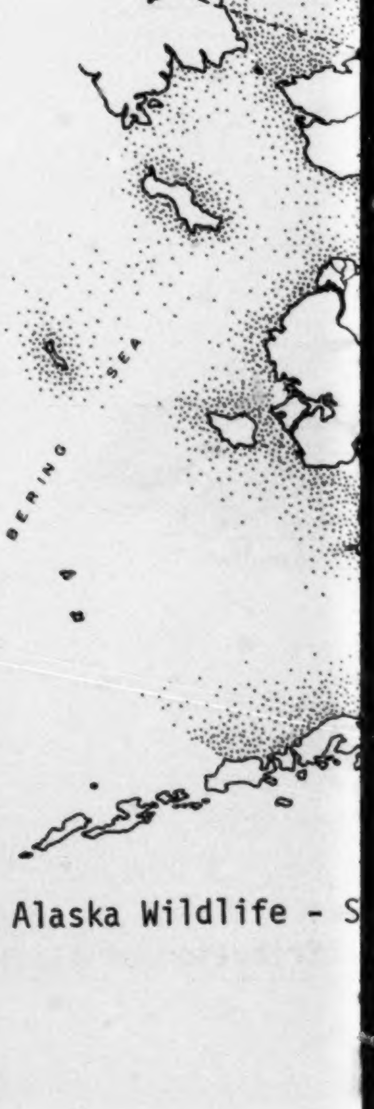
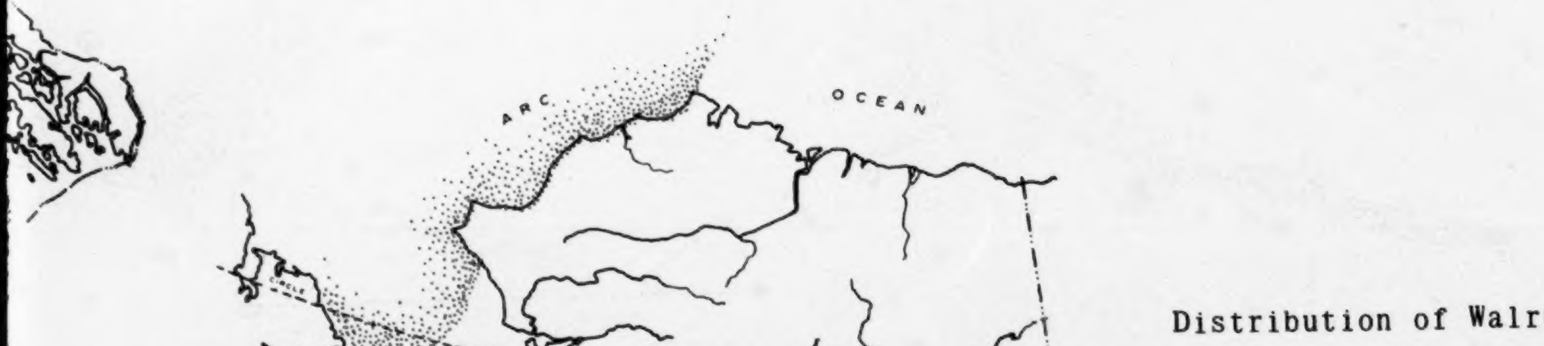


FIGURE IV - 28: Distribution of Alaska Wildlife - S

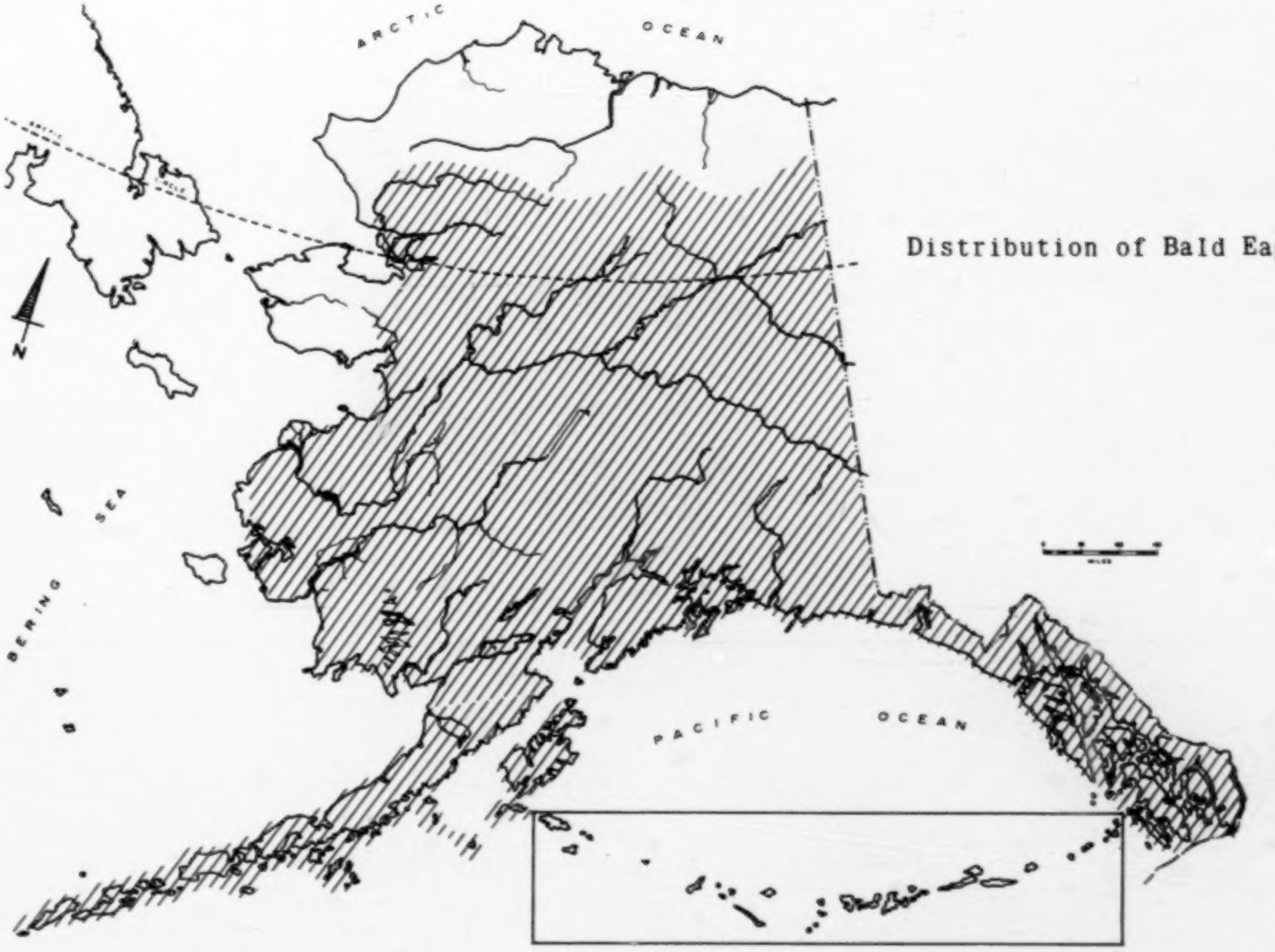
Sea Otter

tions


ARC
OCEAN
CIRCLE
BERING SEA
PACIFIC OCEAN
MILES

Distribution of Walrus

on of Alaska Wildlife - Sea Otter, Walrus


ARCTIC OCEAN
BERING SEA
PACIFIC OCEAN
N

Distribution of Bald Eagle

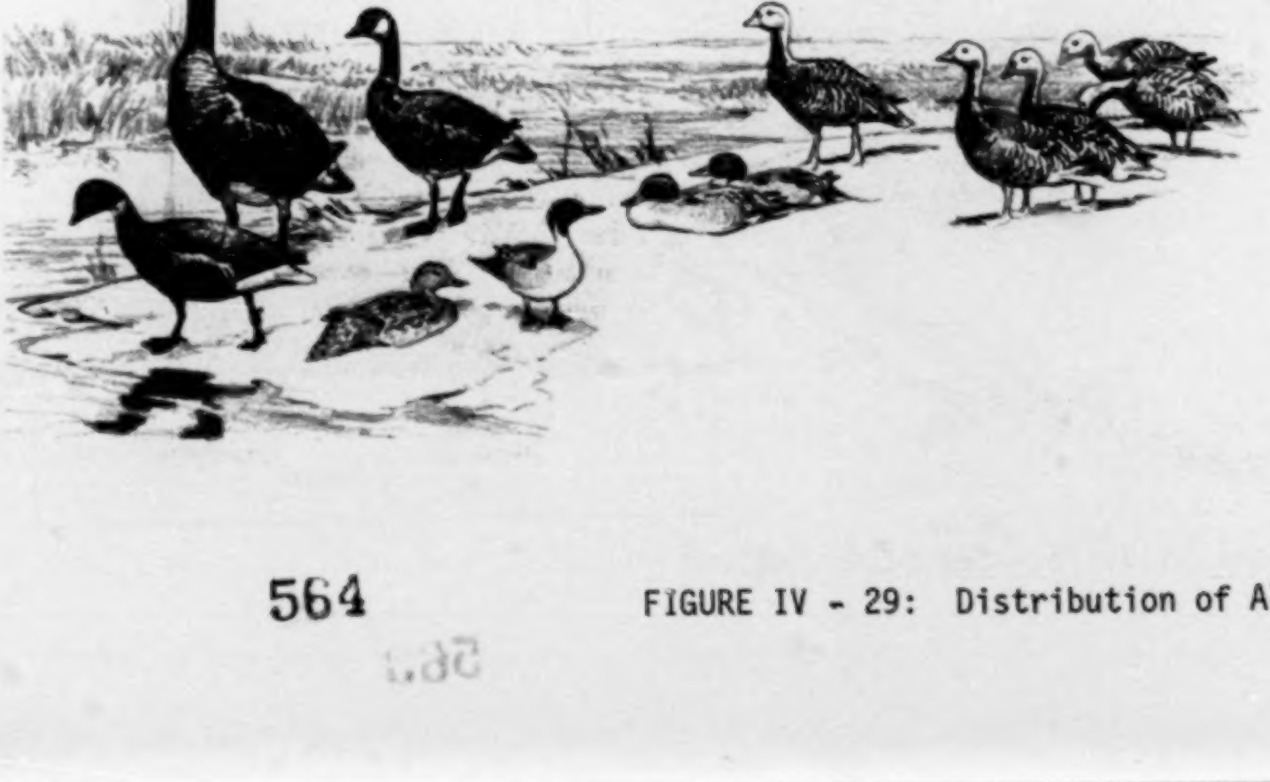
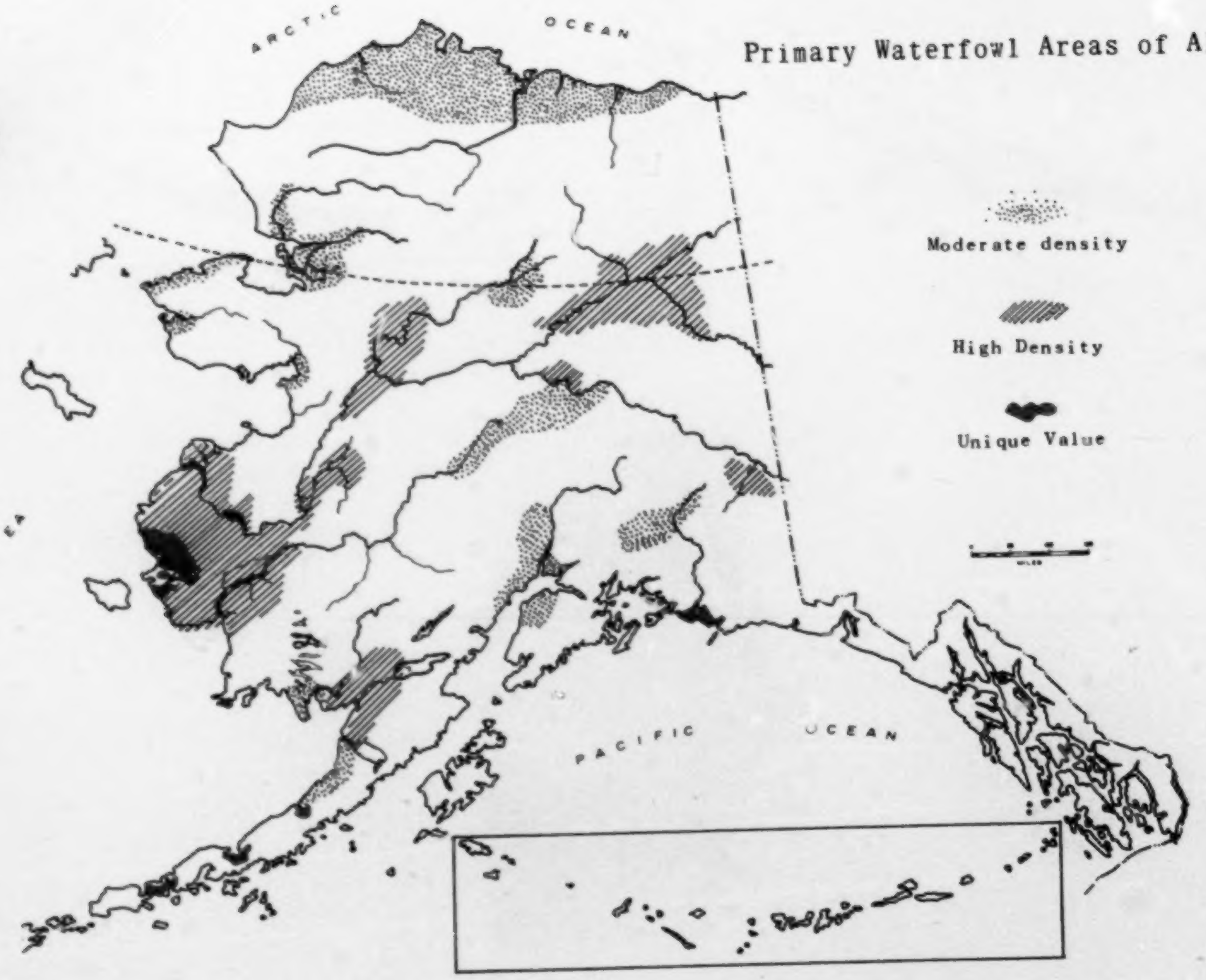


FIGURE IV - 29: Distribution of Alaska Wildlif

on of Bald Eagle

Primary Waterfowl Areas of Alaska


ARCTIC
OCEAN
Moderate density
High Density
Unique Value
PACIFIC
OCEAN

tion of Alaska Wildlife - Bald Eagle, Waterfowl

WATER

Alaska's water resources are extensive and impressive. The total annual runoff of Alaska's streams is estimated to be about 800 millian acre-feet [source estimates for Alaska's annual runoff vary due to the scarcity of hydrological data]. In addition, there are extensive areas of ground water. The water supplies are generally well distributed throughout Alaska and adequate to meet any foreseeable municipal, industrial, hydro-electric or mitigation needs. Water supplies are deficient in the Northwest and Southwest Regions and parts of the Interior. In these cold areas, regulation and distribution of available supplies are problems.

Projections of population growth and economic development in the state indicate rapidly increasing water demands, particularly for municipal and industrial uses. Near-future growth involves industries extracting and processing the state's mineral, forest, and fisheries resources. These industries are large water users. In general, the available supplies greatly exceed the projected demands, and Alaska will have a water surplus for many years to come except in localities and regions of intensive development.

The largest potential growth area for water use is for hydroelectric power. The state has the largest undeveloped water power reserves in the nation. Development needs for watershed protection, flood control and navigation will remain local in nature in the near future. However, increased use of the forests and minerals will certainly require increased attention to needs for watershed management and river control.

In the natural state, the water and related land resources represent outstanding values. These resources form an important part of Alaska's scenic attraction and recreation potential. They support large populations of migratory waterfowl and other game species and prime commercial and sport fisheries. Approximately 3,500 miles of rivers in the state are considered commercially navigable. Any water resource development plan must give full consideration to preservation and enhancement of these natural values. The natural values constitute optimum use in many cases.[3]

Availability and Quality

Totaling nearly 2,000,000,000 acre-feet per year, the annual runoff of United States rivers divides almost equally among the three geographic areas of Alaska, the eastern states, east of the Mississippi River, and the western states.[4] (See Figure IV-30).

Alaska	650 million acre-feet
Eastern States	660 million acre-feet
Western States	680 million acre-feet

This geographic division follows river basin boundaries as designated by the Water Resources Council. It groups the Tennessee, Ohio, Great Lakes, North Atlantic, and South Atlantic-Gulf basins as the 'Eastern States,' and the remainder of the South 48 as the 'Western States.'[5]

The division of the nation's two billion acre-feet of annual water crop obviously does not conform to or match the land areas or location of population. This is shown by the following table.[6] (See Figure IV-31).

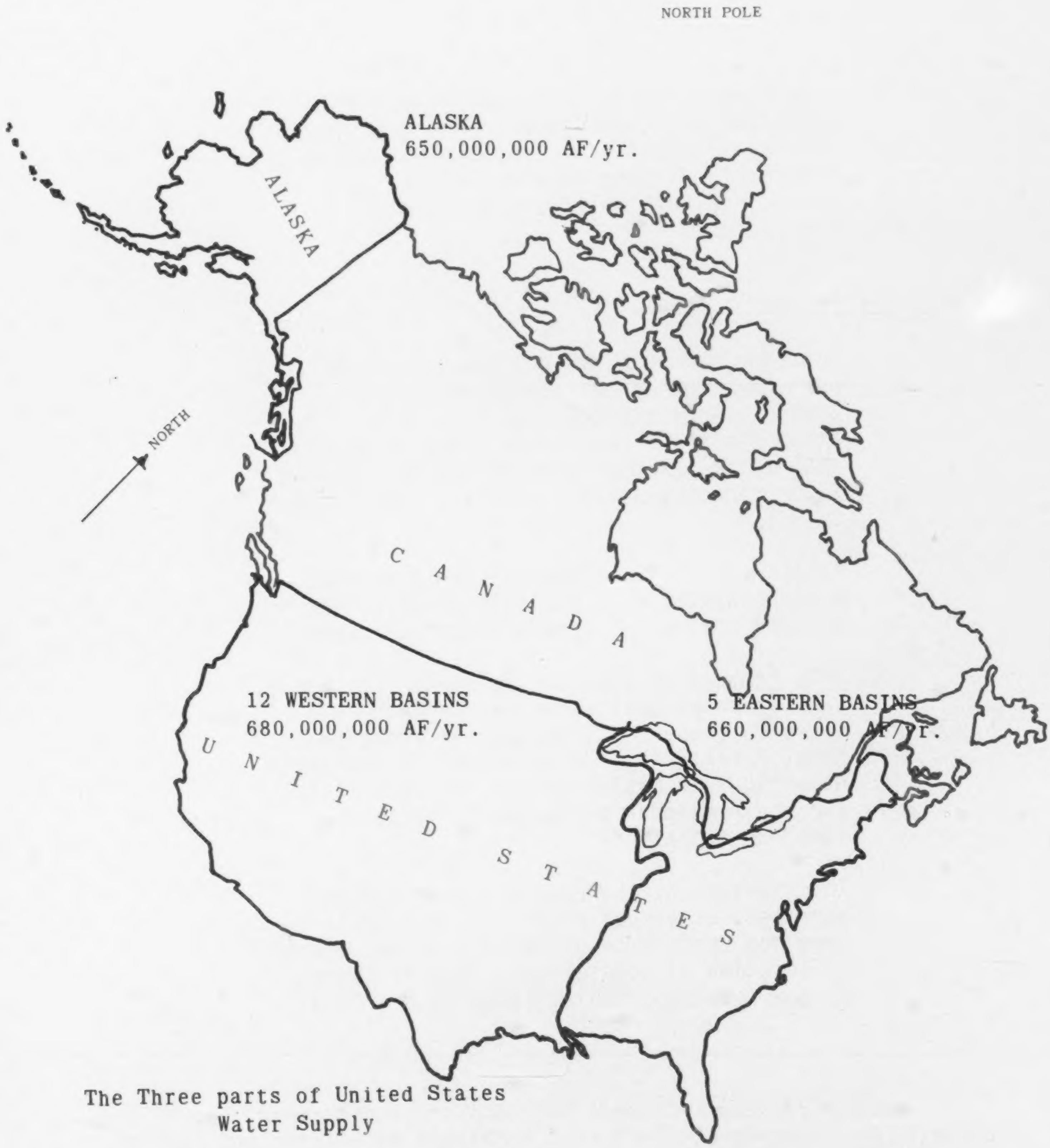
---

[3] *Water Resources Council 1967 National Assessment, Alaska Region,* prepared by Inter-Agency Technical Committee for Alaska and Federal Field Committee for Development Planning in Alaska, June 1967.

[4] Gus Norwood, Alaska Power Administration; Address to the seminar on *The Continental Use of Arctic Flowing River,* Washington State University, Pullman, Washington, April 1968.

[5] *Ibid.*

[6] *Ibid.*


NORTH POLE
ALASKA
650,000,000 AF/yr.
ALASKA
NORTH
CANADA
12 WESTERN BASINS
680,000,000 AF/yr.
5 EASTERN BASINS
660,000,000 AF/yr.
UNITED STATES

The Three parts of United States
Water Supply

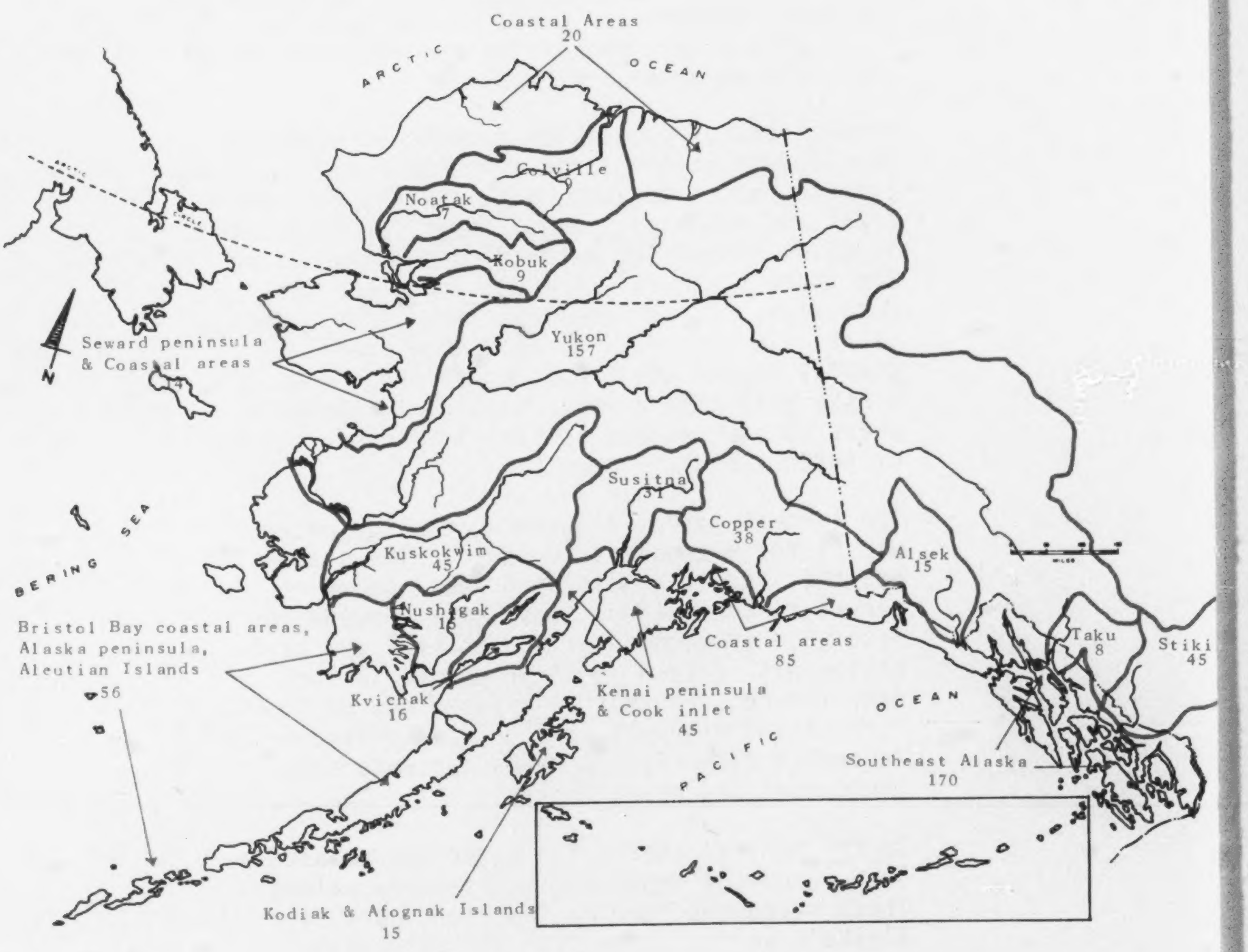
N
Sev
& C
BERING
Bristol
Alaska p
Aleutian
5

FIGURE IV - 30: Parts of the United

Distribution of Alaska's Water Crop

(Millions of Acre-Feet)

(Alaska Water Crop totals 800 M.A.F. per year, including 150 M.A.F. inflow from Canada.)


Coastal Areas
20
ARCTIC OCEAN
ARCTIC CIRCLE
Colville
9
Noatak
7
Kobuk
9
Yukon
157
Seward peninsula
& Coastal areas
14
N
BERING SEA
Susitna
31
Copper
38
Alsek
15
Kuskokwim
45
Nushagak
16
Bristol Bay coastal areas,
Alaska peninsula,
Aleutian Islands
56
Kvichak
16
Coastal areas
85
Taku
8
Stiki
45
Kenai peninsula
& Cook inlet
45
PACIFIC OCEAN
Southeast Alaska
170
Kodiak & Afognak Islands
15

arts of the United States and Alaska Water Supply

FIGURE IV - 31

NATIONAL DIVISION OF ANNUAL WATER CROP

	Area (Square Miles)	1960 Population (1,000's)	Annual Water Crop	
			Million Acre-Feet	Acre-Feet Per Sq. Mile
Alaska	586,400	226	650	1,150
Eastern States	822,600	110,869	660	800
Western States	2,190,700	65,420	680	310
Total	3,599,700	176,515	1,990	

Source: Gus Norwood, Alaska Power Administration; Address to the seminar on *The Continental Use of Arctic Flowing River*, Washington State University, Pullman, Washington, April 1968.

The water resource of Alaska is fairly well distributed throughout the state. This may be noted from Figure IV-33 showing major drainage patterns and estimated discharges.

In addition, a measure of the proportionate regional share of the Alaska water resource may be gained from Figures IV-32 and IV-33.

FIGURE IV - 32

ALASKA'S LARGEST LAKES

Lake	Region	Surface Area (Square Miles)
Iliamna	Bristol Bay-Cook Inlet	1,000
Becharof	Bristol Bay	458
Teshekpuk	Arctic Slope	315
Naknek	Bristol Bay	242
Tustumena	Cook Inlet	117
Clark	Cook Inlet	110
Dall	Southwest Coastal Lowlands	100

Source: *Principal Lakes of the United States*, Geological Survey Circular No. 476.

River

Yukon
(Koyuk

(Tanar

(Porcu

Kuskokwi

Copper

Colville
Stikine
Susitna
Nushagak
Noatak
Kobuk
Alsek
Kvichak
Taku

[a]Incl
[b]Incl
[c]Most

Data Sou

FIGURE IV - 33

MAJOR RIVERS OF ALASKA

River	Region	Drainage Area Square Miles	Estimated Average Discharge bgd	Remarks
Yukon	- -	330,000[a]	139.5	
(Koyukuk)	Koyukuk-Lower Yukon	(32,600)	20.7	Yukon Tributary
(Tanana)	Tanana	(44,500)	22.0	Yukon Tributary
(Porcupine)	Upper Yukon-Porcupine	(46,200)	12.3	Yukon Tributary
Kuskokwim	Southwest Coastal Lowland & Upper Kuskokwim	43,600	40.1	
Copper	Copper River & Gulf of Alaska	24,400[b]	34.0	
Colville	Arctic Slope	24,000	7.8	
Stikine	Southeast	19,700[c]	40.1	
Susitna	Cook Inlet	19,400	27.8	
Nushagak	Bristol Bay	14,100	12.9	
Noatak	Bering Straits	12,600	6.5	
Kobuk	Bering Straits	12,000	8.4	
Alsek	Southeast	9,500[c]	12.9	
Kvichak	Bristol Bay	7,700	14.2	
Taku	Southeast	6,700[c]	7.1	

---

[a] Includes 110,000 square miles in Canada.
[b] Includes 1,270 square miles in Canada.
[c] Most of drainage area is in Canada.

Data Sources: Drainage areas - Corps of Engineers
Discharge estimates - Bureau of Reclamation (unpublished)

[But] any discussion of the Alaska water resources logically starts with the Yukon River. The Yukon, by drainage area size and runoff, ranks among the five largest river systems of the North American Continent. The Yukon drains a total area of 330,000 square miles, one-third of which is in Canada. The Alaska portion of the Yukon drainage constitutes roughly 40 percent of the state's land area.

Alaska's 12 largest rivers are listed in (Figure IV-33] together with drainage areas and estimated average discharge. The largest lakes and the three largest tributaries of the Yukon River are also listed in the .... [Figure IV-32 and 33]. The 12 streams (including the Yukon) drain roughly two-thirds of the state. The remainder is drained by literally thousands of river and stream systems discharging independently into the ocean.

The Yukon, Stikine, Alsek and Taku may be classed as major international rivers.

A rather wide range of runoff characteristics is exhibited. Low-lying areas within the influence of the Gulf of Alaska have a high unit runoff with relatively little seasonal variation. Runoff from the mountainous areas adjacent to the Gulf is unusually high - annual unit runoff usually exceeds 100 inches, and runoff of over 300 inches per year is found in some areas. At the other extreme, low runoff rates and progressively shorter summer runoff seasons are characteristic of the northern areas.

The mountains near the Gulf of Alaska also contain Alaska's largest glaciers. Malaspina -- the largest -- is approximately the size of Rhode Island. Streams fed by the glaciers exhibit sustained high summer flows and relatively little variation in flow from year to year. The Alaska Range also has numerous glaciers, and these dominate the runoff characteristics of the Copper and Susitna River systems and of many Yukon and Kuskokwim tributaries draining the north slopes of the mountains. The glacier-fed streams carry large amounts of sediment.

Permafrost, or permanently frozen ground, has a widespread effect on water supplies in the Interior and Northwest subregions. By restricting subsurface drainage, permafrost creates extensive wetland areas and, at the same time, restricts ground water recharge to the streams. As a result, many streams of Interior Alaska, and most streams and rivers of Northwest Alaska, have little or no winter flow.

Severe annual flooding, complicated by ice jams, is characteristic of the Alaska rivers. Large areas are inundated each year by overbank flow causing evacuation of the villages along the rivers. Ice scour contributes to heavy debris and sediment loads during the spring breakup.

Water quality is good throughout the region with two general exceptions. There are extensive areas of restricted drainage throughout the state resulting, usually, from impermeable subsurface materials (including permafrost). The surface expressions are the muskeg and swamp areas. Surface and ground waters derived from these areas usually are high in organic and iron content. The second exception is the high sediment content of the glacier-fed streams.

At present, knowledge of ground water resources is limited to the more settled areas of the state. The principal areas of ground water use are Anchorage, (including Palmer), the Kenai Peninsula, and Fairbanks. Comprehensive studies of the availability of ground water in certain limited areas of the state have been made within the past few years, but no overall reports of ground water in the state are available. Ground water is available in large quantities throughout most of the Yukon River floodplain, but little use is currently being made of this potential supply because of a lack of settlement and industrial activity. In that portion of the state which is underlain by permafrost, it is extremely difficult to obtain ground water. In some instances, water is present below permafrost; but in the northern portions of the state high salinity is a problem in use of such waters. Supplies of ground water are also limited in Southeastern Alaska and on Kodiak Island. Steep mountains and rapid runoff characterize these regions, and a lack of surficial deposits to store and retain the water preclude extensive use of ground water supplies.

Ground water quality throughout the state is generally good with most waters having a dissolved mineral content of less than 200 ppm (parts per million). Many areas of the state have problems of high iron content in ground water. In the Fairbanks and Kenai Peninsula areas treatment is needed to remove iron prior to municipal use.[7]

Water Use Patterns

Historically, Alaska Natives made wide-spread use of the water resources for transportation and for fisheries harvest. In some areas, their personal property attitudes regarding water use were quite similar to the beneficial use water rights concepts of today. Today this remains true although these uses now, as in earlier days, are of varying intensity. Access to water for transportation and fishing uses have been important factors in locating nearly all Alaska communities -- Native and Caucasian and, water transportation is still of great importance to residents of large parts of the state having no road or rail access.

In general, though, the developed uses for municipal and industrial supplies and power are concentrated close to the larger cities and, for most of the rest of the state, present water uses represent little change from natural conditions.

A summary of such existing water use patterns is included in Figure IV-34.

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[7] *Water Resources Council 1967 National Assessment, Alaska Region*, prepared by Inter-Agency Technical Committee for Alaska and Federal Field Committee for Development Planning in Alaska, June 1967.

FIGURE IV - 34

Estimated Present and Future Water Withdrawals and Consumption, Alaska Region Units: MGD

Year	Public Supplies	Rural Use	Irrigation	Self-Supplied Industry	Fuel Electric Power	Total
	Water Withdrawals					
1965	32	8	-	102	3	145
	Water Consumption					
1965	7	1	-	4	0	12

Sources: 1965 Withdrawals and Consumption from Geological Survey Inventory
Estimated Future Values are estimated by Inter-Agency Technical Committee for Alaska.

The developed uses are small and are concentrated in the more populous areas of the state. Per capita use from the public systems is high and reflects: (1) the present unlimited supplies available to some of the smaller communities; and (2) a number of water-using industries, especially the canneries, supplied from public systems.

Major categories of use for self-supplied industry are the processing of timber and seafood products. Pulp mills at Sitka and Ketchikan are the largest individual users. Water use for seafood processing is concentrated during harvest seasons. In Southwest Alaska, three-fourths of the annual water use for this industry occurs during the 30 days of the salmon season. Hydroelectric power represents the largest developed use in the state. Estimated withdrawal in 1965 was 748 mgd.

In-stream use for navigation and recreation involves a large part of the resource, but the intensity of use is very low on a regional basis. Alaska has over 7,360,000 acres of lakes that are productive fish habitat, and over 365,000 miles of productive streams providing additional migration, spawning, rearing and growth habitat. These waters support prime sport and commercial fisheries. The rivers, lakes and floodplains provide habitat for important waterfowl and other game populations. Recreational use of water in Alaska, including sportfishing, tends to be localized because of limited access and the small population.

The existing river-and watershed-control works are strictly of a local nature. They consist of floodways, minor dredging, and stabilization measures in the cities and towns. Except for serious flood problems in Fairbanks, the potential damage to existing developments is slight. Flooding causes periodic evacuation of several villages, principally along the Yukon River and its tributaries and the Kuskokwim.[8]

Restraints on Use

Water supplies for each region of the state are categorically adequate for foreseeable future developments. However, cost of development and required measures for storage and treatment will vary widely.

For example, a first problem in the permafrost areas is locating an unfrozen water source for winter supplies. Storage for the entire winter's water supply may be needed. Water distribution and sewage collection facilities must be in or on frozen ground; the facilities may require heating.

Generally, the waters of the state are of excellent quality. However, just as in other parts of the country, finding water of suitable quality for local use is often a problem.

Most surface water sources carry seasonal sediment loads, thus they may require sediment removal before use of the water. Streams fed by active glaciers often carry heavy sediment and debris loads which add to costs for developing these sources. The glacier-fed streams also carry sediments in colloided suspension (rock flour). Here treatment beyond settlement may be required before use.

Many Alaskan communities are located in areas of restricted drainage with associated high water table conditions. Surface and ground waters derived from these areas are usually high in organic and iron content.

For the many communities along the larger rivers, seasonal flooding and attendant water supply contamination are real problems.

Many of these problems can be handled with available techniques. However, there are a great many research and development problems connected with remote area water and water-related problems, particularly in Arctic regions and associated with environmental pollution generally, which require accelerated basic research.

Future Water Resources Development

At the present time there are no definitive plans for long range water resources development in Alaska. Although some work has been accomplished of an inventory nature on the water resources and related development potentials, much more must be done.

Work to date has identified some tremendous natural values and some outstanding future development potentials and efforts are now underway towards programing framework studies of Alaska water and related land resources.

Hydro-Electric Development

As an example of potential water resource values, the most recent inventory of Alaska hydro powersites[9] shows a firm energy potential of some 161 billion kilowatt hours per year in 76 of the more attractive powersites. This represents an estimated 34 percent of the identified undeveloped hydroelectric potential in the United States. As such, this resource is of potential national significance. However, it is likely that some of these sites may never be developed, and it must be recognized that whereas on the one hand this may obviously be a valuable future asset to the state, it may also be a detriment when Federal Power Site withdrawals prevent either valid Native claim solutions or state land selections.

A location map of the power site inventory of the state is shown on Figure IV-35. The map shows that the hydro potentials are spread widely over the state. They constitute valuable potential resources for nearly all regions of the state.

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[8] *Ibid.*

[9] Data for this inventory summary is as submitted for the Federal Power Commission, Alaska Power Survey. The map in Figure IV-35 is referenced to this data.

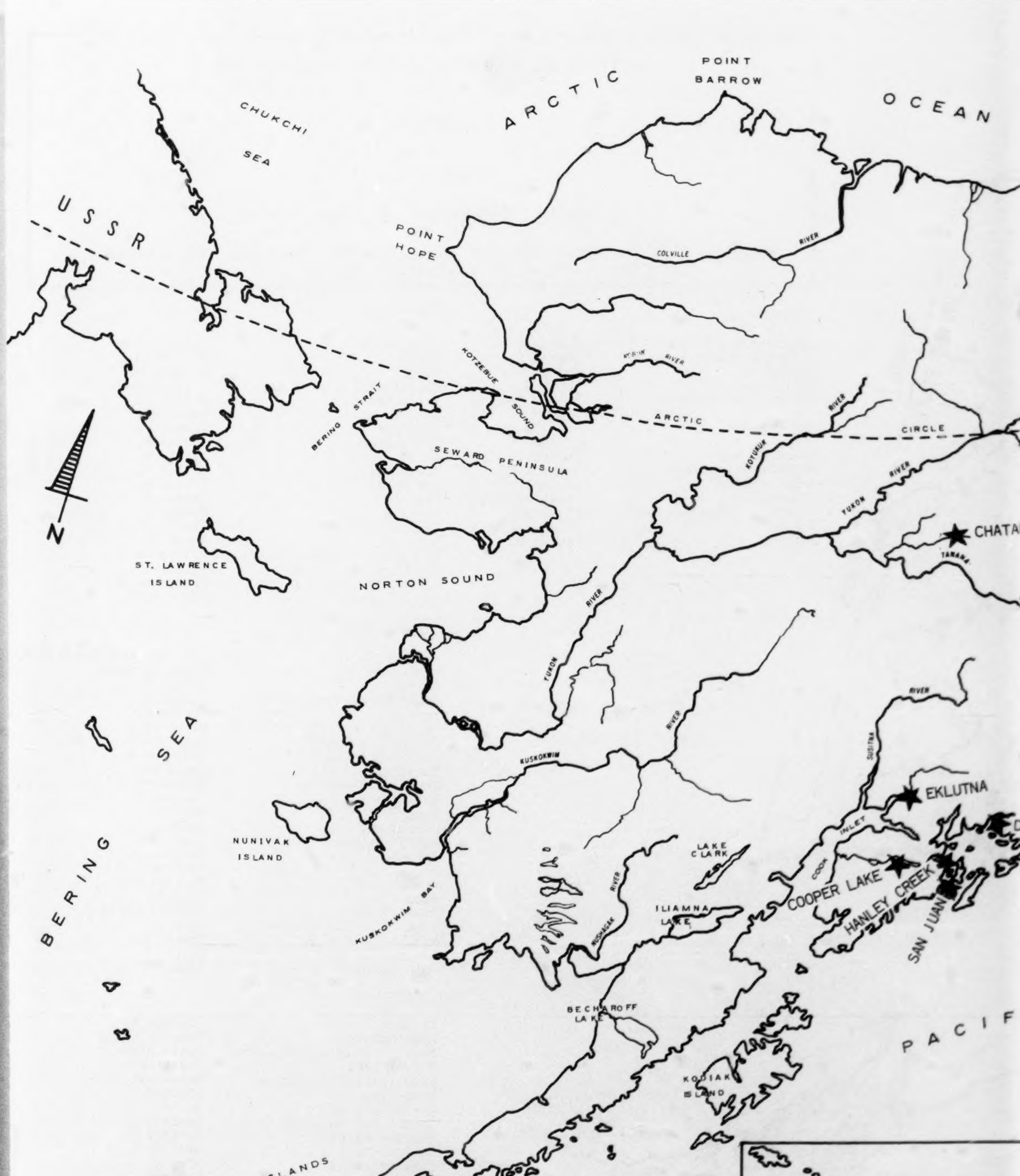
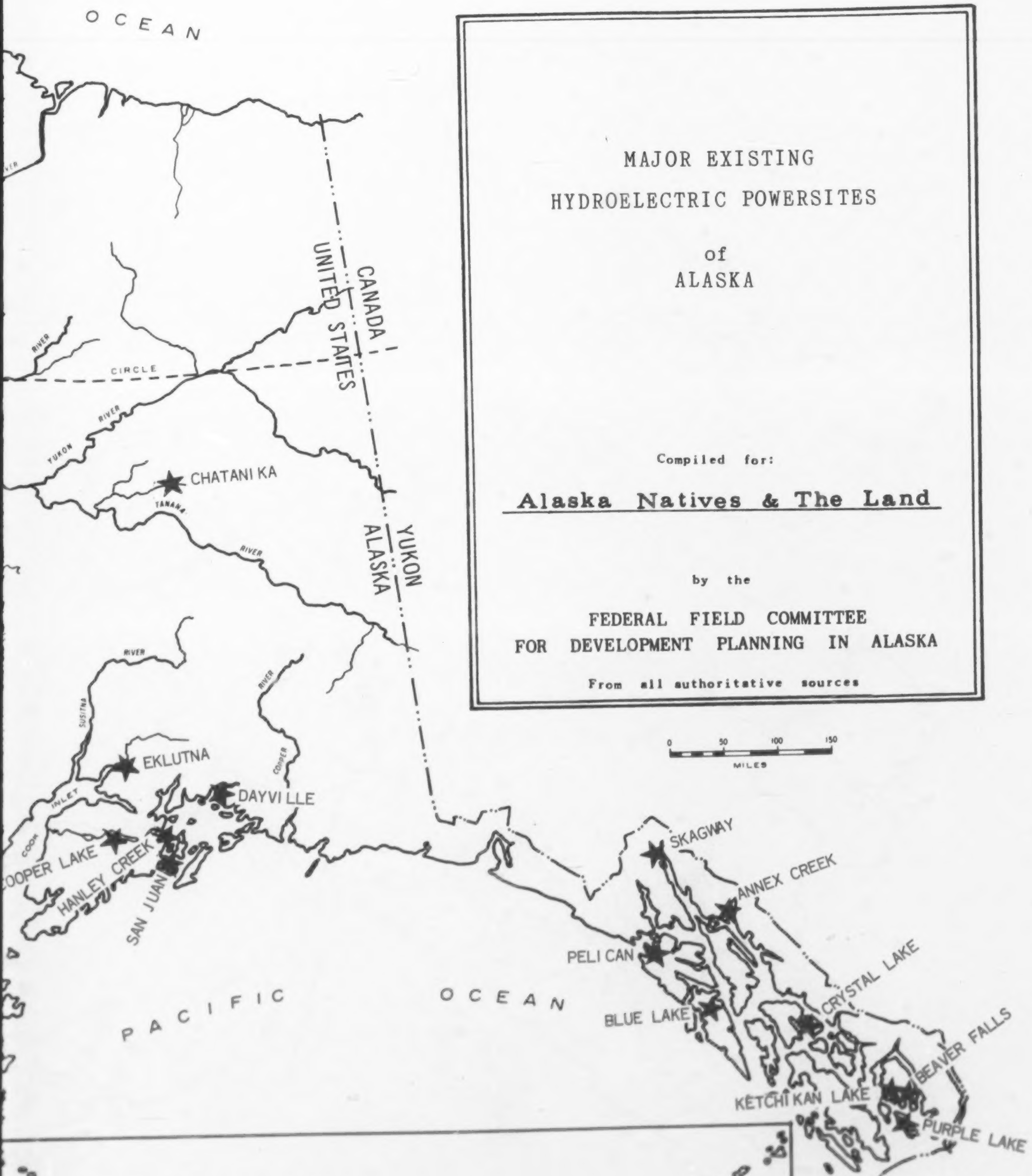

POINT BARROW
ARCTIC
OCEAN
CHUKCHI SEA
USSR
POINT HOPE
COLVILLE
RIVER
KOTZEBUE SOUND
NOATAK RIVER
BERING STRAIT
ARCTIC
CIRCLE
SEWARD PENINSULA
KOYUKUK
RIVER
YUKON
RIVER
CHATA
TANANA
ST. LAWRENCE ISLAND
NORTON SOUND
YUKON
RIVER
BERING
SEA
KUSKOKWIM
RIVER
SUSITNA
RIVER
EKLUTNA
COOK
INLET
NUNIVAK ISLAND
LAKE CLARK
COOPER LAKE
HANLEY CREEK
SAN JUAN
KUSKOKWIM BAY
NUSHAGAK
RIVER
ILIAMNA LAKE
BECHAROFF LAKE
PACIF
KODIAK ISLAND
ALEUTIAN ISLANDS
N

FIGURE IV - 35-A



MAJOR EXISTING
HYDROELECTRIC POWERSITES
of
ALASKA

Compiled for:

Alaska Natives & The Land

by the

FEDERAL FIELD COMMITTEE
FOR DEVELOPMENT PLANNING IN ALASKA

From all authoritative sources

OCEAN
CANADA
UNITED STATES
CIRCLE
RIVER
YUKON RIVER
CHATANIKA
TANANA RIVER
YUKON
ALASKA
RIVER
SUSITNA
RIVER
COPPER
EKLUTNA
DAYVILLE
INLET
COOK
COOPER LAKE
HANLEY CREEK
SAN JUAN
SKAGWAY
ANNEX CREEK
PELICAN
BLUE LAKE
CRYSTAL LAKE
BEAVER FALLS
KETCHIKAN LAKE
PURPLE LAKE
PACIFIC OCEAN
0 50 100 150
MILES
ALEUTIAN ISLANDS

IGURE IV - 35-A

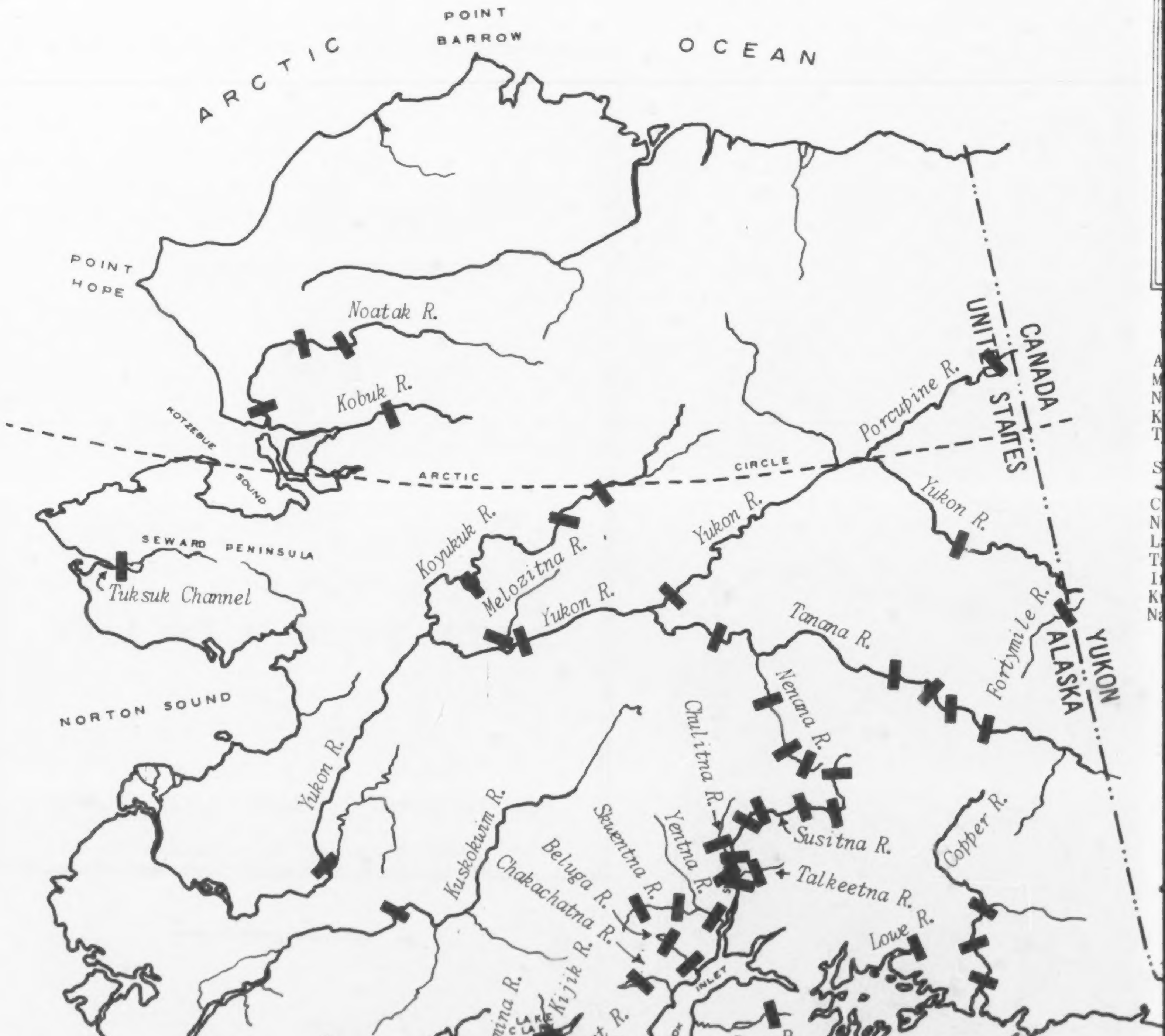
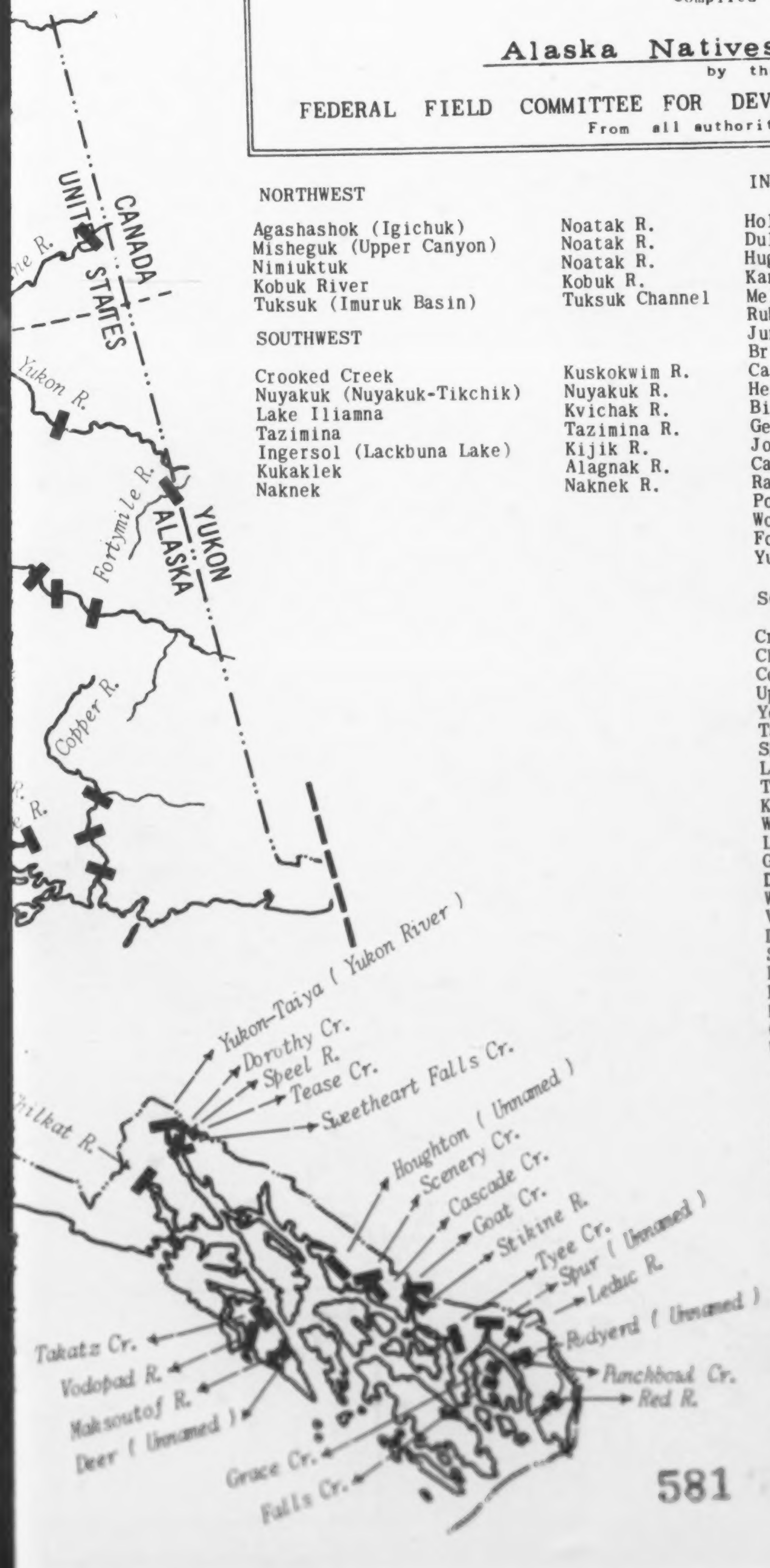

POINT BARROW
ARCTIC OCEAN
POINT HOPE
Noatak R.
Kobuk R.
KOTZEBUE SOUND
ARCTIC CIRCLE
SEWARD PENINSULA
Tuksuk Channel
NORTON SOUND
Koyukuk R.
Melozitna R.
Yukon R.
Yukon R.
Porcupine R.
Yukon R.
UNITED STATES
CANADA
ALASKA
YUKON
Tanana R.
Fortymile R.
Nenana R.
Chulitna R.
Yukon R.
Kuskokwim R.
Skwentna R.
Yentna R.
Susitna R.
Talkeetna R.
Copper R.
Beluga R.
Chakachatna R.
Kijik R.
Lowe R.
Tazimina R.
LAKE CLARK
Crescent R.
COOK INLET
Snow R.
Bradley Cr.
Nuyakuk R.
KUSKOKWIM BAY
Kvichak R.
ILIAMNA LAKE
Alagnak R.
Naknek R.
BECHAROFF LAKE
KODIAK ISLAND
Chilkat R.
Yukon-T
Dorot
Spe
Takatz Cr.
Vodopad R.
Maksoutof R.
Deer (Unnamed)
Grace C
Fall
MILES
0
50
100
150

FIGURE IV - 35-B

POTENTIAL HYDROELECTRIC POWERSITES
of
ALASKA

Compiled for:

Alaska Natives & The Land
by the
FEDERAL FIELD COMMITTEE FOR DEVELOPMENT PLANNING IN ALASKA
From all authoritative sources


CANADA
UNITED STATES
Yukon R.
Fortymile R.
YUKON
ALASKA
Copper R.
Chilkat R.
Yukon-Taiya (Yukon River)
Dorothy Cr.
Speel R.
Tease Cr.
Sweetheart Falls Cr.
Houghton (Unnamed)
Scenery Cr.
Cascade Cr.
Goat Cr.
Stikine R.
Tyee Cr.
Spur (Unnamed)
Leduc R.
Rudyerd (Unnamed)
Punchbowl Cr.
Red R.
Takatz Cr.
Vodopad R.
Maksoutof R.
Deer (Unnamed)
Grace Cr.
Falls Cr.

NORTHWEST

Agashashok (Igichuk)	Noatak R.
Misheguk (Upper Canyon)	Noatak R.
Nimiuktuk	Noatak R.
Kobuk River	Kobuk R.
Tuksuk (Imuruk Basin)	Tuksuk Channel

SOUTHWEST

Crooked Creek	Kuskokwim R.
Nuyakuk (Nuyakuk-Tikchik)	Nuyakuk R.
Lake Iliamna	Kvichak R.
Tazimina	Tazimina R.
Ingersol (Lackbuna Lake)	Kijik R.
Kukaklek	Alagnak R.
Naknek	Naknek R.

INTERIOR

Holy Cross	Yukon R.
Dulbi	Koyukuk R.
Hughes	Koyukuk R.
Kanuti	Koyukuk R.
Melozitna	Melozitna R.
Ruby	Yukon R.
Junction Island	Tanana R.
Bruskasna	Nenana R.
Carlo	Nenana R.
Healy (Slagle)	Nenana R.
Big Delta	Tanana R.
Gerstle	Tanana R.
Johnson	Tanana R.
Cathedral Bluffs	Tanana R.
Rampart	Yukon R.
Porcupine (Campbell River)	Porcupine R.
Woodchopper	Yukon R.
Fortymile	Fortymile R.
Yukon-Taiya	Yukon R.

SOUTHCENTRAL

Crescent Lake	Lake Fork of Crescent R.
Chakachamna	Chakachatna R.
Coffee	Beluga R.
Upper Beluga (Beluga River)	Beluga R.
Yentna	Yentna R.
Talachulitna (Shell)	Skwentna R.
Skwentna (Hayes)	Skwentna R.
Lower Chulitna	Chulitna R.
Tokichitna	Chulitna R.
Keetna (Talkeetna)	Talkeetna R.
Whiskers	Susitna R.
Lane	Susitna R.
Gold	Susitna R.
Devil Canyon	Susitna R.
Watana	Susitna R.
Vee	Susitna R.
Denali	Susitna R.
Snow	Snow R.
Bradley Lake	Bradley Creek
Lowe (Keystone Canyon)	Lowe R.
Million Dollar	Copper R.
Cleave (Peninsula)	Copper R.
Wood Canyon	Copper R.

SOUTHEAST

Chilkat	Chilkat R.
Lake Dorothy	Dorothy Creek
Speel Division, Snettisham	Speel River
Tease Creek	Tease Cr.
Sweetheart Falls Creek	Sweetheart Falls Cr.
Houghton	Unnamed
Scenery Creek	Scenery Cr.
Thomas Bay (Cascade Cr.)	Cascade Cr.
Stikine River	Stikine R.
Goat	Goat Cr.
Tyee Creek	Tyee Cr.
Spur	Unnamed
Leduc	Leduc R.
Rudyerd	Unnamed
Punchbowl Creek	Punchbowl Cr.
Red	Red R.
Lake Grace	Grace Creek
Swan Lake (lower Swan Lake)	Falls Cr.
Maksoutof River	Maksoutof R.
Deer	Unnamed
Takatz Creek	Takatz Cr.
Green Lake	Vodopad R.

Navigation on River Systems

Of essential importance are 15 major river systems in Alaska, four of which qualify as international rivers as they provide some means of access to Canada. The names of these river systems and a brief resume of their relative navigability are shown in Figure IV-36. Their location is shown in Figure IV-37.

FIGURE IV - 36

NAVIGABILITY OF MAJOR RIVERS IN ALASKA -- 1967

RIVER	NAVIGABILITY
Yukon	Navigable by shallow-draft, flat bottom river boats from the mouth to near the head of Lake Bennett. It cannot be entered or navigated by ocean going vessels. Controlling depths are 7 feet to Stevens Village and 3 to 5 thereon to Fort Yukon.
Koyukuk	Navigable by vessels drawing up to 3 feet to Allakaket during normally high river flow and to Bettles during occasional higher flows.
Tanana	Navigable by shallow-draft, flat-bottom vessels and barges from the mouth to Nenana and by smaller river craft to the Chena River 201 miles above the mouth. Craft of 4-foot draft can navigate to Chena River on high water.
Porcupine	Navigable to Old Crow, Yukon Territory, by vessels drawing 3 feet during spring runoff and fall rain floods.
Kuskokwim	Navigable by 18-foot draft ocean going vessels from mouth upriver 65 miles to Bethel. Shallow-draft (4 ft.) vessels can ascend river to Mile 465. McGrath at Mile 400.
Copper	The Copper River is not considered navigable by deep or shallow-draft commercial vessels. Undoubtedly, sufficient depth is available to permit short reach transits by negligible draft craft such as outboard skiffs, runabouts and canoes.
Colville	Details not known - The mouth is believed used to unload freight with further transportation provided by outboard skiffs with negligible draft.
Stikine	Navigable (1 May-15 Oct) from mouth 165 miles to Telegraph, B. C. by shallow-draft, flat-bottom river boats.
Susitna	Not navigable by ocean going vessels. Shallow-draft, flat-bottom riverboats can navigate to Yentna River, Mile 20 and up the Yentna about 65 miles.

RIVER

Nushag

Noatak

Kobuk

Alsek

Kvicha

Taku

Sou

The T
opmen

RIVER	NAVIGABILITY
Nushagak	The river is navigable by small vessels of 2 1/2-foot draft to Nunachuak about 100 miles above the mouth.
Noatak	Shallow-draft barges can ascend Noatak River to a point about 18 miles below Noatak village. Shallow-draft vessels can continue on to Noatak.
Kobuk	Controlling channel depth is about 5 feet through Hotham Inlet, 3 feet to Ambler and 2 feet to Kobuk Village, about 210 river miles.
Alsek	Navigability unknown. River is believed to be braided and shallow.
Kvichak	The river is navigable for vessels of 10-foot draft to Alagnak River, 22 miles above the mouth of Kvichak River. Remainder of river (28 mi) navigable by craft drawing 2-4 feet depending on stage of river.
Taku	Subject to river stage. Flat-bottom river boats and shallow-draft barges can ascend river as far as Tulsequah, B. C., about 5 miles above the boundary.

Source: *Transportation and Economic Development in Alaska,* prepared by The Transportation Task Force for The Federal Field Committee for Development Planning in Alaska, 1968.

At present, according to statistics provided by the Federal Maritime Commission in their recently-published report The Alaska Trade Study, about 30,000 to 50,000 tons of commerce are being transported annually over the Kobuk, Koyukuk, Kuskokwim, Kvichak, Noatak, Nushagak and Yukon Rivers.[10]

The Kobuk River is an excellent example of the impact of resource exploration activity on Alaskan river transportation. Except for 1959, the average annual cargo movement over the Kobuk River between 1958 and 1963 was about 1,000 tons. In 1964, increased copper ore exploration activity at Bornite induced a quadrupled inbound movement of 4,300 tons.[11]

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[10] *Transportation and Economic Development in Alaska,* prepared by The Transportation Task Force for The Federal Field Committee for Development Planning in Alaska, 1968.

[11] *Ibid.*

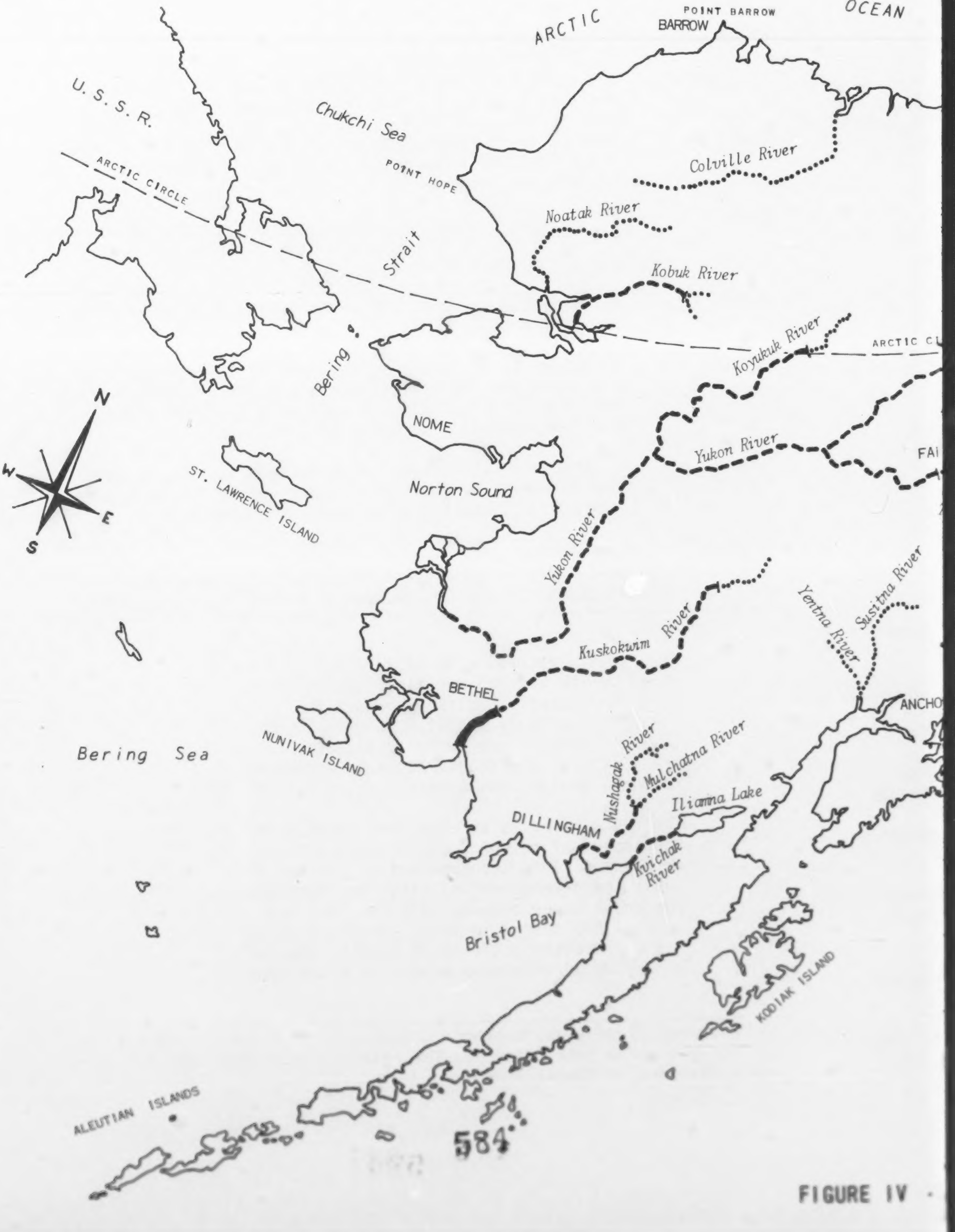
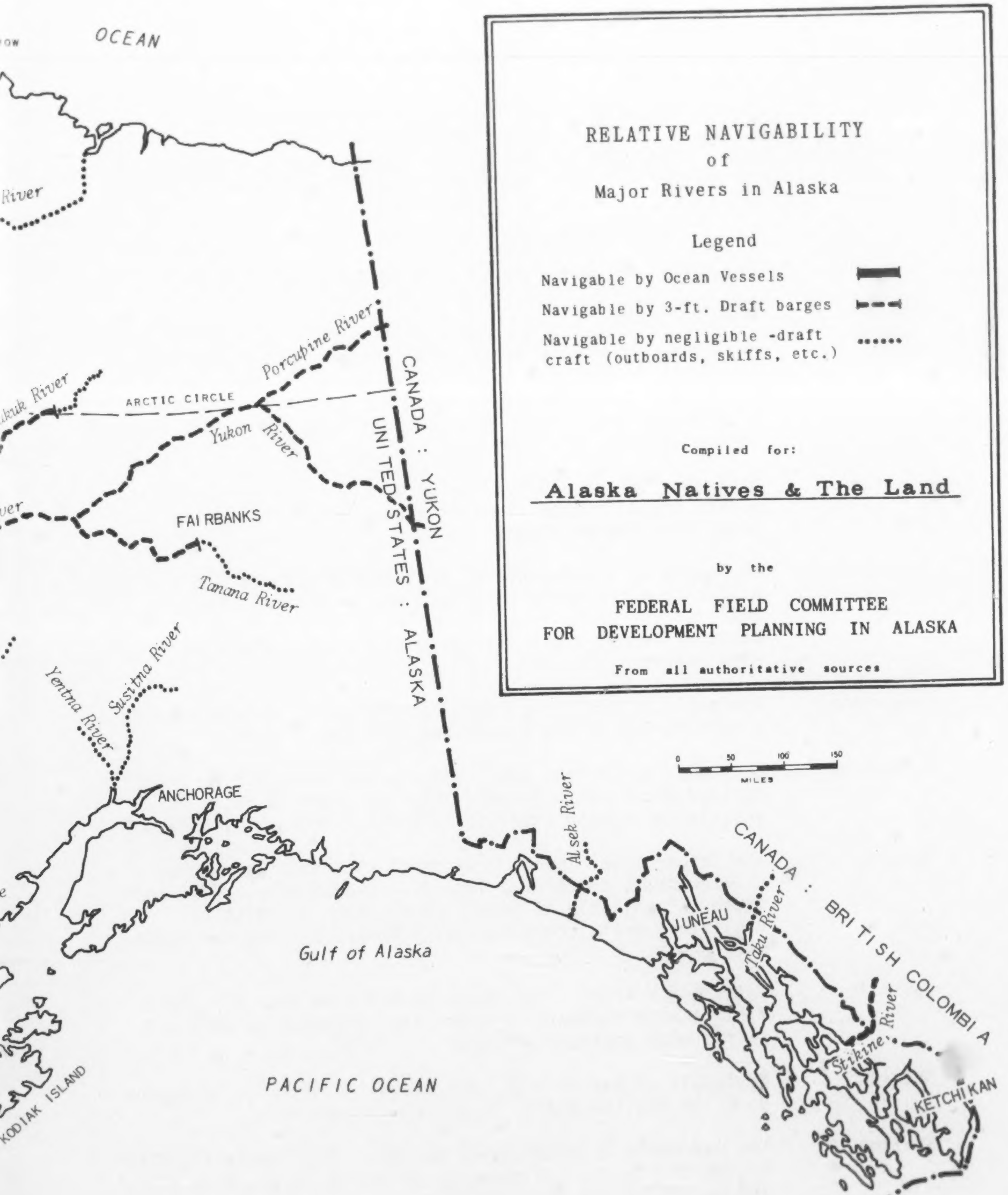

ARCTIC
POINT BARROW
BARROW
OCEAN
U. S. S. R.
Chukchi Sea
ARCTIC CIRCLE
POINT HOPE
Colville River
Noatak River
Kobuk River
Strait
Bering
ARCTIC C
Koyukuk River
N
W
E
S
NOME
Yukon River
FAI
ST. LAWRENCE ISLAND
Norton Sound
Yukon River
Susitna River
Yentna River
Kuskokwim River
BETHEL
ANCHO
NUNIVAK ISLAND
Bering Sea
Nushagak River
Mulchatna River
Iliamna Lake
DILLINGHAM
Kvichak River
Bristol Bay
KODIAK ISLAND
ALEUTIAN ISLANDS

FIGURE IV ·



RELATIVE NAVIGABILITY
of
Major Rivers in Alaska

Compiled for:

Alaska Natives & The Land

by the

FEDERAL FIELD COMMITTEE
FOR DEVELOPMENT PLANNING IN ALASKA

From all authoritative sources

Legend
Navigable by Ocean Vessels ▬
Navigable by 3-ft. Draft barges ▬ ▬
Navigable by negligible -draft craft (outboards, skiffs, etc.) ••••••
0 50 100 150
MILES
OCEAN
River
Porcupine River
ARCTIC CIRCLE
Yukon River
FAIRBANKS
Tanana River
Susitna River
Yentna River
ANCHORAGE
CANADA : YUKON
UNITED STATES : ALASKA
Alsek River
CANADA : BRITISH COLOMBIA
JUNEAU
Taku River
Stikine River
KETCHIKAN
Gulf of Alaska
PACIFIC OCEAN
KODIAK ISLAND

FIGURE IV · 37

Many potential navigation projects have been authorized by the Congress for study by the Corps of Engineers in Alaska. These planning studies evaluate the engineering practicability and economic feasibility of all proposed projects. Although the majority of these studies are directed towards coastal harbor and estaurine channel improvements, the present Kobuk River study is an example of studies for river improvements and related development.

Village Water Problems

People need drinking water and sewers, and protection from floods and high water table. People need access to the water they use for livelihood and for recreation. These are essential water-related aspects of an acceptable way of life. They should be considered goals for the Alaska Natives and for this reason they relate importantly to this study.

Water-related problems of the Alaska villages remain a long way from solution. The problems of poor health and sanitation conditions as related to water supplies and village living standards have been set forth earlier.

More important here is the mention of some helpful aspects of land tenure adjustment involving water resources. Solutions to water supply and sanitation problems require careful community planning approaches and resourceful engineering together with funding levels substantially above current programs. All aspects of community planning must be considered, including:

... Location away from flood and high water table problems, or the development of necessary protection measures;

... Location and development of community water supplies and the institution of measures to protect supplies from contamination; and

... Provision for community water distribution and waste collection facilities, plus necessary waste treatment, including required chemical or mechanical treatment.

Water for the Future

In the years ahead, water will be a key requirement for future economic expansion throughout the state: in the form of hydro power, as a coolant or cleaning agent for industry, as a domestic source for new towns as well as old, as a tourist attraction, for transportation, and many other uses that will have a bearing on national security and growth.

Orderly development of the state's water resources is thoroughly dependent on a framework of land and water management policies that:

... Provide for preservation and enhancement of the high values of water in its natural state for fish and wildlife, recreation, tourism, transportation and other uses.

... Stimulate development of water for use by Alaska cities and communities, industries, power, and other new uses.

... Preserve and enhance water quality for all uses.

State and federal law establishes these basic principles with respect to water:

... Waters are reserved in public ownership and are subject to appropriation for beneficial use--ownership of land does not carry with it ownership of water.

... Preservation and enhancement of water quality are in the public interest; land ownership does not entail exemption from state and federal water quality and pollution control objectives.

In recognition of their water resources values, certain lands in the state are reserved in public ownership for future water power development. Their evaluation as important public resource assets is important but equally important is the elimination of federal withdrawals for future power site development where no likelihood of construction use is apparent.

Land management policies to limit possibility of flood damage through flood plain zoning are also important development tools. To a large extent, public interest in these policies transcends land ownership or tenure.

Similarly any change in land ownership from the public domain to Native claimants or other private lands should recognize the public ownership of state and federal waters and the public interests so attached.

AGRICULTURE

The development of agriculture in the contiguous United States is distinct from that of Alaska. For the contiguous states the initial comparative advantage of agricultural production and shipment to Alaska has not been overcome, nor is it likely that Alaska will ever be able to compete with the contiguous states to the point of self-sufficiency. The more rigorous climate, short growing seasons, high cost of labor and other more attractive opportunities will be continuing blocks to concerted efforts of agricultural development.

Presently, about 5 percent of local agricultural product consumption is produced in Alaska. In the long run it is possible that such products as meat, hardy vegetables, and small fruits may supply up to 50 percent of Alaskan demand for a particular item. Interstate or foreign trade may be developed with specialty items such as reindeer meat, or protein from Aleutian Islands ranches.[12]

Figure IV-38 quantifies the land capability classes of the state by region. "Suitable" refers to Soil Class II which reflects favorable climate and soil for crop production. "Marginal" land cultivation will probably remain uneconomic for the foreseeable future. The "Cultivated" column reflects the degree of agricultural effort on available land.

By any index of measurement, the agricultural sector is a tiny one in the Alaskan economy. While the largest state, it has the smallest acreage devoted to agriculture--about 80,000 acres, exclusive of large grazing leases. From a peak of 623 in 1939, the number of farms has declined to an estimated 350 presently.[1] These are found in the five fairly distinct agricultural regions of the state as represented in Figure IV-39. Inspection of the percent of the total that the value of production represents in each of the areas suggests the ordering of importance--Matanuska Valley (including Anchorage) typically produces close to 70 percent (by value) of the total.

ESTIMA

Region
Southeast
Gulf of Alask
Copper River
Cook Inlet
Kodiak
Aleutian
Bristol Bay
Upper Kuskokw
Tanana
Upper Yukon-P
Koyukuk-Lower
S.W. Coastal L
Bering Sea
Bering Straits
Arctic Slope

* Marginal be

** Excluding
unit of ac
acreage is

Source: U. S.
Palme

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[12] *Alaska Agricultural Statistics*, 1953-1966, Agricultural Task Force Committee Report to the Federal Field Committee for Development Planning in Alaska, 1966, p. 3. Many of the farms up to 1939 were fur farms; today there are fewer than five fur farms in Alaska.

FIGURE IV - 38

ESTIMATED ACREAGE OF CROPLAND BY REGION (INCLUDES DAIRYLAND)

Region	Potential Commercial Cropland (acres) Suitable	Potential Commercial Cropland (acres) Marginal*	Cultivated 1965**
Southeast	20,000	15,000	200
Gulf of Alaska	5,000	5,000	0
Copper River	50,000	40,000	300
Cook Inlet	1,060,000	650,000	18,300
Kodiak	20,000	35,000	400
Aleutian	20,000	40,000	50
Bristol Bay	10,000	15,000	50
Upper Kuskokwim	40,000	20,000	50
Tanana	380,000	180,000	7,600
Upper Yukon-Porcupine	20,000	20,000	0
Koyukuk-Lower Yukon	10,000	10,000	0
S.W. Coastal Lowlands	2,000	2,000	50
Bering Sea	0	0	0
Bering Straits	3,000	3,000	0
Arctic Slope	0	0	0
TOTAL	1,640,000	1,035,000	27,000

* Marginal because of excessive steepness, shallowness, or wetness.

** Excluding land that has been cleared, but is now idle. The smallest unit of acreage is 50 acres. Where this figure appears, the actual acreage is probably considerably less.

Source: U. S. Department of Agriculture, Soil Conservation Service, Palmer, Alaska, 1968.

The outlook for expanded future commercial production on the acreages shown in Figure IV - 38 is totally dependent upon the following factors:

- ... Consolidation of agricultural holdings into larger economic operations capable of acquiring adequate capital and modern technology; and
- ... Utilizing modern technology and improved management techniques for balanced and competitive production.

Only with the development of trends toward the achievement of these two factors will Alaska agriculture benefit from stabilized market conditions and become competitive with "outside" suppliers in quality and price.

Almost all of the suitable cropland has been selected by the state.

FIGURE IV - 40

VALUE OF AGRICULTURAL PROD

	Crops**		Hay
Region	1966	1956	1966
Southeast	$ 1,500	$ 5,000	$ 8,500
Gulf of Alaska	0	0	0
Copper River	1,000	0	1,000
Cook Inlet	758,000	845,000	846,000
Kodiak	2,000	500	6,500
Aleutian	1,000	0	1,000
Bristol Bay	1,000	2,000	0
Upper Kuskokwim	1,000	1,000	0
Tanana	175,000	422,000	170,000
Upper Yukon-Porcupine	0	0	0
Koyukuk-Lower Yukon	0	0	0
S.W. Coastal Lowlands	500	500	0
Bering Sea	0	0	0
Bering Straits	0	0	0
Arctic Slope	0	0	0
TOTAL	$941,000	$1,276,000	$1,033,000

* Excludes horses, goats, berries, reindeer, and fur. ** Inclu

Source: U. S. Department of Agriculture, Soil Conservation Servi

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condi-
y and

by the

FIGURE IV - 39

VALUE OF AGRICULTURAL PRODUCTION IN ALASKA BY REGION AND PERCENT OF TOTAL--1965

REGION	VALUE OF PRODUCTION (In Thousands of Dollars)	PERCENT OF TOTAL
Tanana Valley	$ 950	18
Matanuska Valley	3,407	66
Kenai Peninsula	481	9
Southeast Alaska	134	3
Southwest Alaska	184	4
TOTAL	$5,156	100

Source: *Alaska Agricultural Statistics, 1953-1966,* Agricultural Task Force Committee Report to the Federal Field Committee for Development Planning in Alaska, 1966, Table II.

FIGURE IV - 40

ALUE OF AGRICULTURAL PRODUCTION*

**	Hay & Silage		Animal Products	
1956	1966	1956	1966	1956
5,000	$ 8,500	$ 14,000	$ 24,000	$ 197,000
0	0	0	0	0
0	1,000	0	500	0
845,000	846,000	637,000	2,640,000	1,700,000
500	6,500	2,500	148,000	55,000
0	1,000	0	165,000	50,000
2,000	0	0	1,500	0
1,000	0	0	0	0
422,000	170,000	69,000	301,000	150,000
0	0	0	0	0
0	0	0	0	0
500	0	1,000	0	1,000
0	0	0	0	0
0	0	0	7,000	8,000
0	0	0	0	0
1,276,000	$1,033,000	$723,500	$3,287,000	$2,161,000

indeer, and fur. ** Includes oats, barley, other grains, vegetables.

, Soil Conservation Service, Palmer, Alaska, 1968.

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Figure IV-40 provides a comparative value of production, by region, for the years 1956 and 1966. These prices are not in constant dollars but reflect some degree of inflation.

There is some acreage devoted to gardens in and around the principal cities and in the major agricultural areas, but no estimate of the actual number of acres is possible. The products of this acreage can be viewed as fresh food supplements having a luxury value more than economic effect. However, the combination of some plots, listed as commercial cropland, along with jobs in town have probably had a beneficial effect on Alaska's growth. The families could not afford to live in Alaska with the loss of either part of this combination of sustenance.

FIGURE IV - 41

SUMMARY OF POTENTIAL AGRICULTURAL CROPS OF ALASKA

Grasses

- Bromegrass
- Timothy
- Bluegrass
- Red Fescue
- Meadow foxtail
- Ryegrass
- Orchardgrass
- Reed canarygrass

Legumes

- Clover

Small grains

- Barley
- Oats
- Wheat

Vegetables

- Potatoes
- Carrots
- Cabbage
- Lettuce
- Radishes
- Cauliflower
- Broccoli
- Brussels sprouts
- Spinach
- Rutabagas
- Turnips
- Endive
- Green onions
- Squash
- Beets
- Green beans
- Peas

Small fruits

- Strawberries
- Raspberries
- Currants

Source: U.S. Department of Agriculture, Soil Conservation Service, Palmer, Alaska, 1968.

Although growing seasons in Alaska are generally short and cool, many of the common cultivated crops can be grown in favored localities. These crops include grasses, some legumes, small grains, potatoes, and other hardy vegetables, and small fruits (Figure IV-41).

The total acreage on which these crops can be grown, however, is small compared with the land area of the state. Suitable areas for commercial crop production occur principally in the Cook-Inlet Region and in narrow belts bordering interior rivers. Over most of the state the soils are too cold, too wet, too steep, or too shallow to be used for crops.

Available grazing land is estimated at about 1,500,000 acres which are not now being used to capacity. As in all cases of resource use, physical feasibility must be balanced with economic feasibility, and the willingness of entrepreneurs to live in remote areas. The grazing areas are primarily on Kodiak Island, the Alaskan Peninsula and on the Aleutian Islands. As transportation improves in volume and capacity with attendant reductions in cargo rates, the demand of grazing lands may increase. As more animals become available for slaughter, foreign interest in protein could improve economic stability in the grazing industry. For example, wool is a prime product from ranches on the Aleutian Chain, but there is no market due to transportation problems for mutton or lamb from these same flocks except on a limited scale that does not absorb the increase in animals.

The Seward Peninsula is the primary reindeer grazing range of the state. The federal range is administered by the Bureau of Land Management. Units of this range are made available to Native herders by the Bureau of Land Management in accordance with statute and regulation and in cooperation with the herders and the Animal Husbandry specialists of the Bureau of Indian Affairs.

There is controversy surrounding many facets of the reindeer industry and its management including: bureaucratic dominance, federal-state relationships, economics, slaughtering and marketing as well as range management and husbandry practices. For purposes of this review, however, much of this controversy is academic, and will remain so until improved resource inventories are completed, resource management conflicts are better understood and the economics of the industry become stabilized.

Figures IV - 42 and IV - 43 show values derived from uses made of reindeer from present herds. The map in Figure IV - 44 shows present reindeer herd areas as well as other livestock and crop lands.

FIGURE IV - 42

REINDEER HERDS AS OF DECEMBER 31, 1966

Region	Carcasses Sold	Carcasses Used in Home	Reindeer on Hand	Sq. Miles of Range	No. of Herds
Bering Straits	3,850	970	24,568	15,494	12
S.W. Coastal Lowlands	1,534	380	11,500	2,640	2
Bering Sea	60	50	1,100	1,720	1
Bristol Bay	0	0	80	106	1
TOTAL	4,444	1,400	37,248	20,960	16

Source: U. S. Department of the Interior, Bureau of Indian Affairs, Annual Report, 1966.

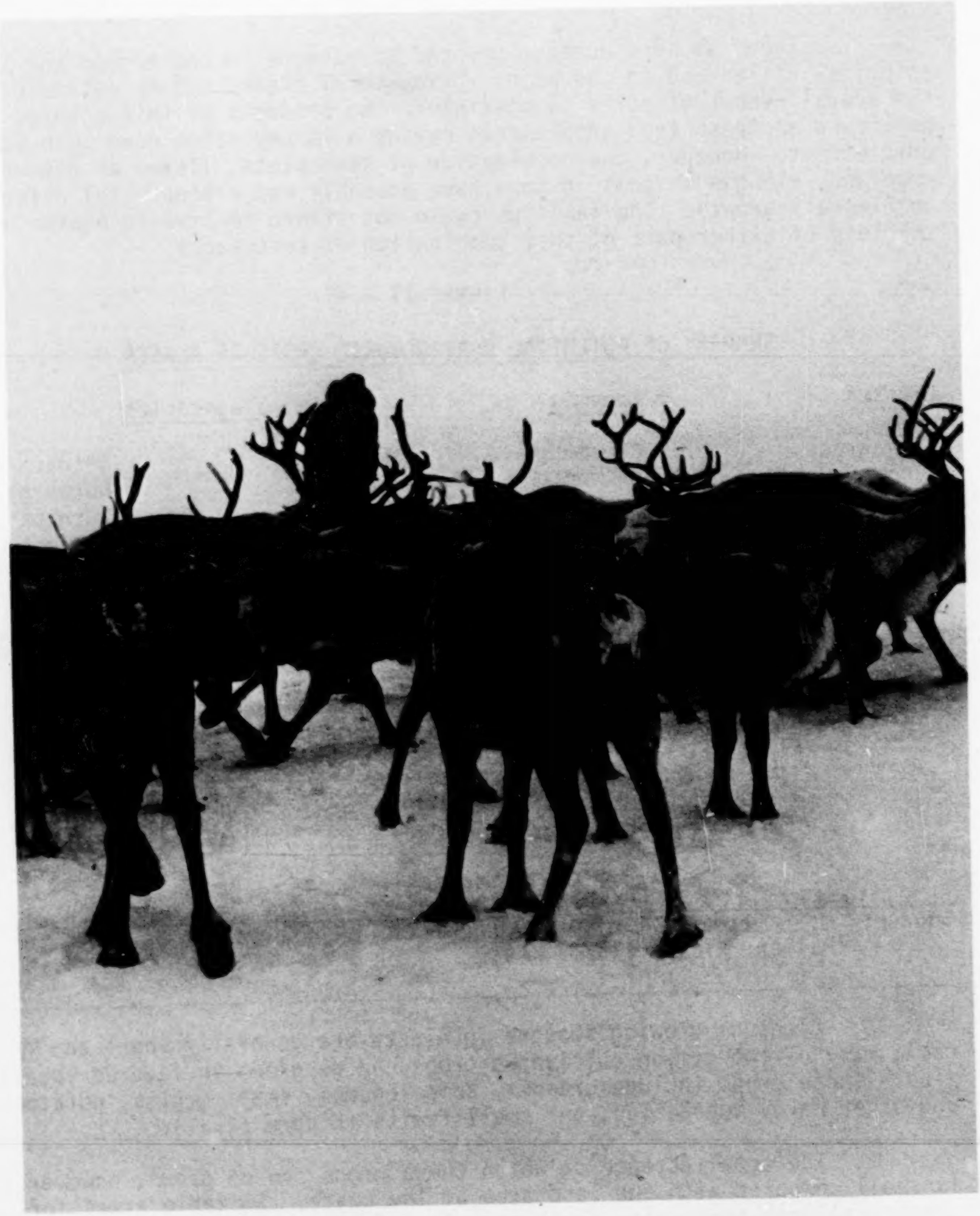
FIGURE IV - 43

GROSS INCOME FROM REINDEER HERDS

Under Administration of Bureau of Indian Affairs
(Calendar Years 1966 and 1965 Compared)

		1966 Income		1965 Income	
A.	Reindeer butchered for sale (per head)	4,444	$168,000	4,347	$177,992
	Reindeer butchered for herd operations and home use (per head)	1,400	70,000	959	47,100
B.	Meat by-products (hearts, livers and tongues) sold and used in home	23,500 lbs.	7,733	18,334 lbs.	6,600
C.	Adult reindeer and fawn skins sold (hair-on) (each)	1,147	22,940	1,166	17,640
D.	Adult skins tanned into leather (each)	385	3,003	1,269	8,883
E.	Skins used in herd operations and home use (each)	900	3,700	925	3,075
F.	Leg skins (4 per set) sold and home use	1,725 sets	950	550 sets	962
G.	Live adult reindeer sold	20 ea.	4,000	13 ea.	1,430
H.	Cut-up antlers	3,898 lbs.	1,559	-0-	-0-
I.	Sets of antlers	173 ea.	865	110 ea.	440
	TOTALS		$282,750		$264,122

Source: U. S. Department of the Interior, Bureau of Indian Affairs, Annual Report, 1966.



Eskimo herder with reindeer, Seward Peninsula.
Photo by Bureau of Land Management.

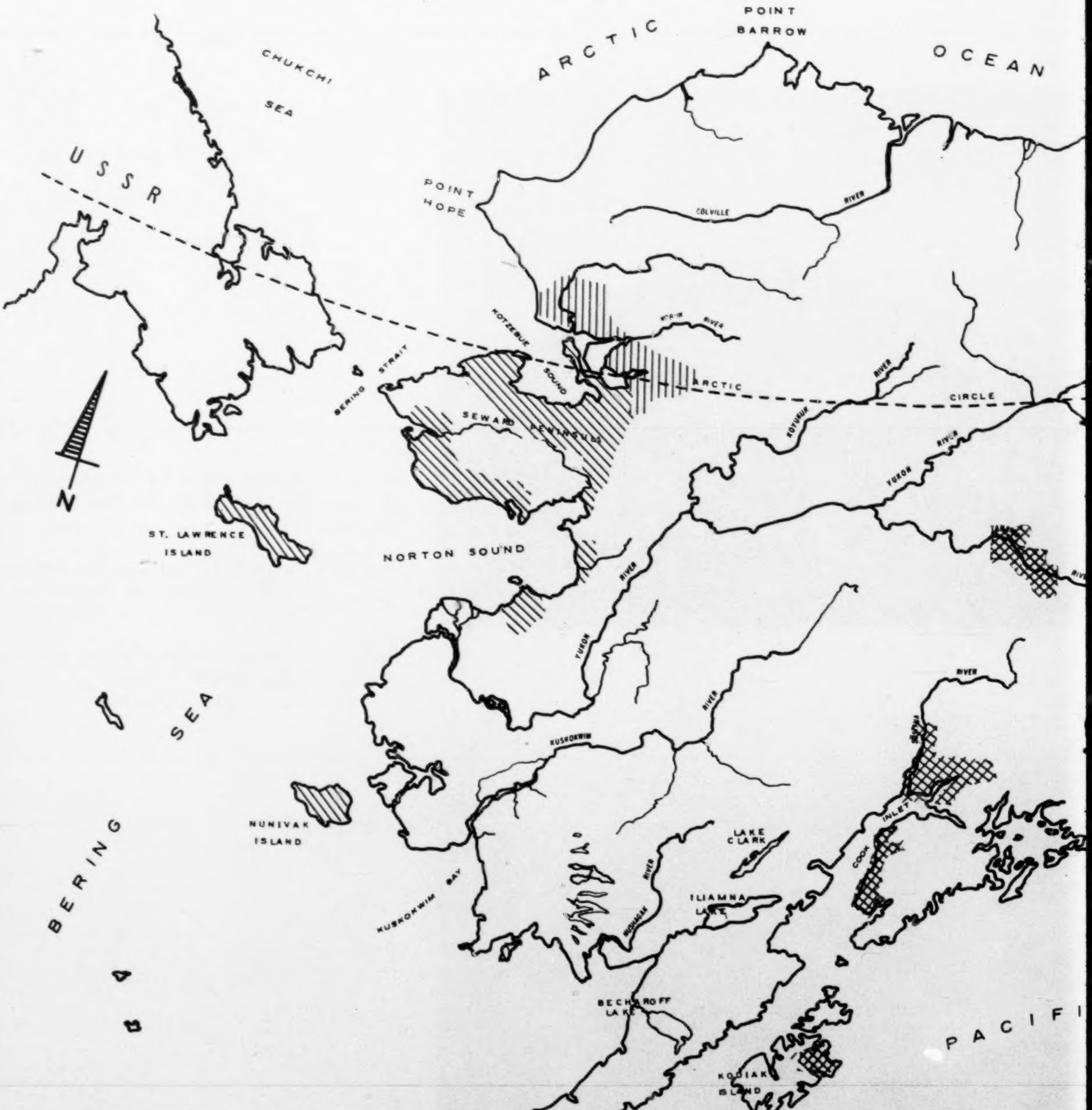
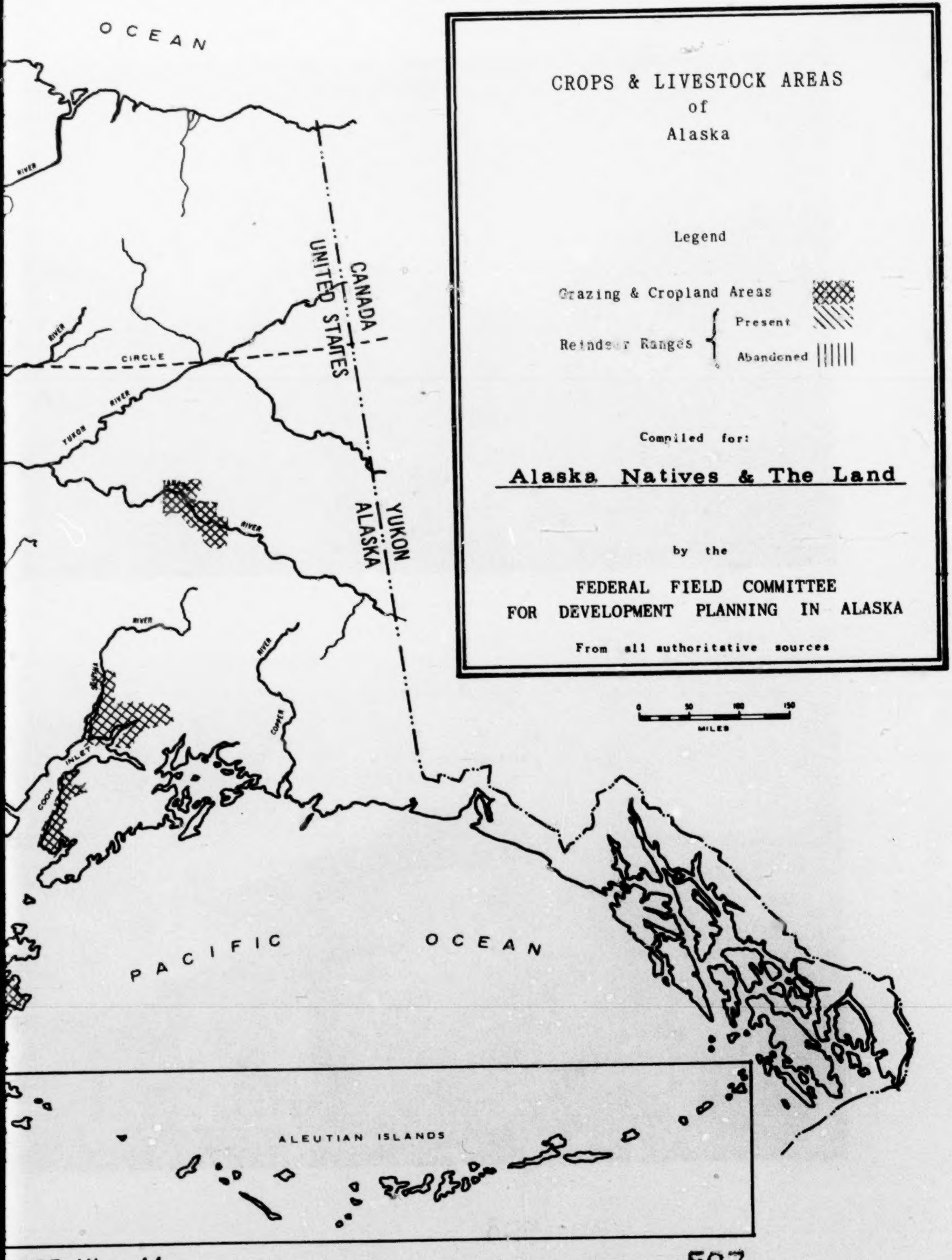

POINT BARROW
ARCTIC OCEAN
CHUKCHI SEA
USSR
POINT HOPE
COLVILLE RIVER
KOBUK RIVER
KOTZEBUE SOUND
BERING STRAIT
ARCTIC CIRCLE
SEWARD PENINSULA
KOYUKUK RIVER
YUKON RIVER
N
ST. LAWRENCE ISLAND
NORTON SOUND
YUKON RIVER
BERING SEA
KUSKOKWIM RIVER
SUSITNA RIVER
NUNIVAK ISLAND
KUSKOKWIM BAY
LAKE CLARK
NUSHAGAK RIVER
ILIAMNA LAKE
COOK INLET
BECHAROFF LAKE
KODIAK ISLAND
PACIFI
ALEUTIAN ISLANDS

FIGURE IV - 44



CROPS & LIVESTOCK AREAS
of
Alaska

Compiled for:

Alaska Natives & The Land

by the

FEDERAL FIELD COMMITTEE
FOR DEVELOPMENT PLANNING IN ALASKA

From all authoritative sources

OCEAN
RIVER
CANADA
UNITED STATES
RIVER
CIRCLE
YUKON RIVER
YUKON
ALASKA
RIVER
RIVER
RIVER
SUSITNA
COPPER
COOK INLET
Legend
Grazing & Cropland Areas
Reindeer Ranges
Present
Abandoned
0
50
100
150
MILES
PACIFIC OCEAN
ALEUTIAN ISLANDS

GURE IV - 44

FOREST

Alaska has 16 percent of the forest land in the United States, or 119 million acres. This is as much forest land as is found in the States of Montana, Washington, Oregon, and California combined. But the average quality of forest land in Alaska is below that of the states mentioned. Only 28.2 million acres are considered commercial; that is, capable of producing a minimum of 20 cubic feet of industrial wood per acre annually. Oregon alone has nearly as many acres of commercial forest land. For the purposes of this forest resource discussion, the fifteen regions of the state have been grouped into two broad zones, coastal and interior. The coastal zone includes the important forest regions of the state: Southeast, Gulf of Alaska and Kodiak, while the interior zone includes the remaining twelve regions of the state used for this analysis.

Coastal Zone

Ninety-two percent of coastal Alaska, the most productive timberland in the state, is in the Tongass and Chugach National Forests. Private lands constitute only a small portion of the area and at this time have a minor effect on forest management policies and objectives. The state has an important management unit near Haines, and other lands are being or have been selected at Cape Yakataga, on the Kenai Peninsula and in the vicinity of existing towns. Glacier Bay National Monument has about 179,000 acres of commercial forest land. This area is withheld from timber harvesting in order to protect outstanding scenic values.

The timber stands of coastal Alaska are composed of 58 percent hemlock, 37 percent Sitka spruce, and 5 percent other softwoods--mainly cedar. The proportion of hemlock declines with increasing latitude, while the Sitka spruce increases, and cedar drops out of the stand completely.

Quality, too, is influenced by latitude, declining northward. In Southest Alaska the selects, peelers, and No. 1 logs comprise 9 percent of the sawtimber volume while this same component on the other two units is less than one-half as large, only 4 percent.

The earliest use of the timber of coastal Alaska was for fuel and shelter. Lumber production along with local consumption, such as fish trap logs and material for fish boxes, accounted for most of the commercial use prior to World War II. The establishment of pulp mills, starting in 1954, has increased timber use tremendously.

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The product output in 1966 for coastal Alaska was:

Logs	14,500 M board feet
Cants	147,000 M board feet
Lumber	25,000 M board feet
Pulp	390,000 tons

It is estimated that the gross value for wood products produced in the area during 1967 was about $78,000,000. Payrolls were near $25,000,000, and expenditures for supplies and services contributed another $20,000,000 to the economies of local areas. Average direct monthly employment in the woods and mills is estimated at 2,600.

The future is almost certain to show a steady and orderly increase in the development and use of forest resources in the coastal region. By 1980, the full allowable sustained harvest of timber should be attained, resulting in more highly integrated manufacture of pulp, lumber, cants, veneer, etc. At that time, the volume and value of wood products produced should be approximately twice the current figure.

The net annual growth in coastal softwood stands is about 63,800,000 cubic feet. Old-growth sawtimber stands are assumed to have no net growth. Volume in the second generation stands will almost double. The present timber cut per year is about 100,000,000 cubic feet.

The noncommercial stands of coastal Alaska are those forested stands which at maturity fail to produce 8,000 board feet per acre of sawtimber. The total area in noncommercial stands is about 7-1/2 million acres--about 57 percent of the total forest land in coastal Alaska.

As the area develops, the forest industry will find the annual allowable cut a limiting factor. As presently inoperable areas become accessible, the allowable cut will increase until the maximum is reached. This second limit will remain until the virgin forest has been converted to a second-growth forest with an age distribution which maximizes and stabilizes yield.

Interior Zone

Alaska's interior forests cover about 105 million acres, and 22 million acres of this are classed as commercial. Most of the interior forest lands are managed by the Bureau of Land Management, but the state has expressed interest in selecting most of the commercial forest land. Interior forest types are mixtures of white spruce, paper birch, aspen, and balsam poplar. The spruce type accounts for about 57 percent of the commercial forest land, 23 percent in paper birch, 11 percent in aspen, and 9 percent in balsam poplar.

The sawtimber volume amounts to 31.5 billion board feet, or 14.6 percent of the state total. Seventy-seven percent of the interior sawtimber volume is white spruce; and hardwoods, mostly balsam poplar and paper birch, comprise the remaining 23 percent.

The interior stands are primarily young and immature. The total growing stock amounts to 14,349 million cubic feet, and 55.6 percent of this volume is in poletimber trees. Only 32 percent of the forest area is classified as sawtimber stands. This means that at least 68 percent of the area is in an immature condition and not in need of being harvested.

Interior stands have never been used extensively. Residents have always used small amounts for home construction and fuel, but not for manufacture and export. During the gold rush periods, thousands of cords of wood were cut along the Yukon River to run river steamers and also in the gold fields to thaw gravel beds.

At the present time, very little use is being made of the interior stands. The past fire history accounts primarily for the present predominance of immature stands. In 1961, the interior had 51 small sawmills, of which 37 were active. A current estimate lists 62 sawmills, of which 20 are operating. Their total yearly production is believed to be less than 6 million board feet. If operated at full capacity, these mills could probably produce 60 to 100 million board feet annually. However, the interior forests might sustain an annual cut of 450 million board feet or more.

The species composition, timber size, and quality characteristics suggest that the eventual commercial use of interior stands should be for pulpwood. If the commercial forest area as surveyed could be sustained and managed for timber production for a pulpwood economy, the estimated allowable annual cut on a 100-year rotation would approach 385 million cubic feet. If achieved, this would amount to an annual supply of about 4.5 million cords of pulpwood. Thus, theoretically, interior Alaska forests might sustain up to 10 pulpmills of the 500-tons-per-day class. Of course, uses for other than timber production, such as watershed protection, recreation, etc., are likely to be found for much of the interior forest land, and the theoretical allowable cut would require adjustment accordingly.

There are 83 million acres of noncommercial forest land which can meet some of the interior wood needs. Within the noncommercial class are 4.6 million acres now producing between 15 and 20 cubic feet of wood annually. These 4.6 million acres have a total growing-stock volume of 1.1 billion cubic feet. Included in this growing stock are 2.8 billion board feet of sawtimber.

It is not likely that the full allowable cut will be harvested in the interior for many years. The total volume of wood available is more than adequate for important industrial uses, but certain economic and environmental problems must be overcome before the stands can be completely utilized. More complete use of the interior stands will require more and better markets, more development roads, an experienced labor force, efficient export facilities and more silvicultural and ecological knowledge.

There is an important need to obtain complete resource aerial photography and adequate timber inventories for the interior stands. Corollary to this must be the preparation of sound timber management and land use plans recognizing various compatible and competing uses. Complete development and use of the forest resources must necessarily be preceded by appropriate classification for land use. This will be pertinent regardless of land ownership.

Demands for wood and wood products for use in Japan and certain other resource-short Pacific Rim nations can be expected to accelerate rapidly. Alaska's strategic geographic location places the state in a preferred position to supply a good sized portion of that market. Consequently, it can be expected that interior timber stands in the railbelt and other presently accessible areas will be marketable in the near future.

FIGURE IV - 45

NET GROWING STOCK VOLUME ON COMMERCIAL FOREST LAND BY SOFTWOODS AND HARDWOODS, BY POLETIMBER AND SAWTIMBER, ALASKA, 1968

Region	Total growing stock	Total soft-wood	Total hard-wood	Poletimber		Sawtimber	
				Softwood	Hardwood	Softwood	Hardwood
	- - - - - - - - - -	- - - - - - - - - -	- - - - - - - -	(Million cubic feet)	- - - -	- - - - - - -	- - - -
Coastal Zone:							
Southeast	31,795	31,520	275	1,671	51	29,849	224
Gulf of Alaska	2,395	2,370	25	238	12	2,132	13
Kodiak	1,515	1,515	--	142	--	1,373	--
Subtotal	35,705	35,405	300	2,051	63	33,354	237
Interior Zone:							
Arctic Slope	--	--	--	--	--	--	--
Bristol Bay	296	262	34	164	28	98	6
Koyukuk-Lower Yukon	1,947	1,321	626	671	430	650	196
Cook Inlet	3,063	1,445	1,618	614	694	831	924
Copper River	674	587	87	327	70	260	17
Bering Straits	154	132	22	83	19	49	3
Upper Kuskokwim	1,735	1,090	645	510	430	580	215
Aleutian	--	--	--	--	--	--	--
Upper Yukon-Porcupine	3,002	2,148	854	1,158	706	990	148
Bering Sea	--	--	--	--	--	--	--
Tanana	3,403	2,129	1,274	1,086	948	1,043	326
S.W. Coastal Lowlands	75	49	26	24	18	25	8
Subtotal	14,349	9,163	5,186	4,637	3,343	4,526	1,843
Total Alaska	50,054	44,568	5,486	6,688	3,406	37,880	2,080

Source: Department of Agriculture, United States Forest Service, Juneau, Alaska.

FIGURE IV - 47

AREA OF COMMERCIAL AND NONCOMMERCIAL AND COMMERCIAL FOREST LAN BY STAND-SIZE CLASS, ALASKA,

Region	Forest land		
	Total	Non-Commercial	Commercial
	- - - - - - -	- - - - - - - - -	(Thousand
Coastal Zone:			
Southeast	11,201	6,317	4,884
Gulf of Alaska	1,611	1,069	542
Kodiak	435	112	323
Subtotal	13,247	7,498	5,749
Interior Zone:			
Arctic Slope	--	--	--
Bristol Bay	2,741	2,037	704
Koyukuk-Lower Yukon	29,147	25,000	4,147
Cook Inlet	5,271	2,495	2,776
Copper River	4,431	3,371	1,060
Bering Straits	5,311	4,708	603
Upper Kuskokwim	14,007	11,465	2,542
Aleutian	--	--	--
Upper Yukon-Porcupine	22,557	17,612	4,945
Bering Sea	--	--	--
Tanana	19,729	14,902	4,827
S.W. Coastal Lowlands	1,515	1,378	137
Subtotal	104,709	82,968	21,741
All Alaska	117,956	90,466	27,490

Source: Department of Agriculture, United States Forest Service

Sawtimber	
Softwood	Hardwood
29,849	224
2,132	13
1,373	--
33,354	237
--	--
98	6
650	196
831	924
260	17
49	3
580	215
--	--
990	148
--	--
1,043	326
25	8
4,526	1,843
37,880	2,080

FIGURE IV - 46

NET SAWTIMBER VOLUME ON COMMERCIAL FOREST LAND
BY SPECIES, ALASKA, 1968

Region	Total sawtimber	Sitka spruce	Western hemlock	White spruce	Other soft-wood	Balsam poplar	Paper Birch	Aspen	Other hard-wood
	(Million board feet--Int. 1/4)								
Coastal Zone:									
Southeast	165,000	54,198	101,483	--	8,999	--	--	--	1,220
Gulf of Alaska	11,391	5,944	5,378	--	14	--	--	--	55
Kodiak	7,406	7,406	--	--	--	--	--	--	--
Subtotal	184,697	67,548	106,861	--	9,013	--	--	--	1,275
Interior Zone:									
Arctic Slope	--			--		--	--	--	
Bristol Bay	497			474		7	12	4	
Koyukuk-Lower Yukon	5,003			4,276		341	294	92	
Cook Inlet	7,022			3,159		1,636	2,086	141	
Copper River	1,372			1,313		18	30	11	
Bering Straits	420			403		7	7	3	
Upper Kuskokwim	4,147			3,501		242	313	91	
Aleutian	--			--		--	--	--	
Upper Yukon-Porcupine	6,152			5,477		161	341	173	
Bering Sea	--			--		--	--	--	
Tanana	6,687			5,602		304	555	226	
S.W. Coastal Lowlands	187			159		12	12	4	
Subtotal	31,487			24,364		2,728	3,650	745	
Total Alaska	216,184	67,548	106,861	24,364	9,013	2,728	3,650	745	1,275

Source: Department of Agriculture, United States Forest Service, Juneau, Alaska.

FIGURE IV - 47

AREA OF COMMERCIAL AND NONCOMMERCIAL FOREST LAND
AND COMMERCIAL FOREST LAND
BY STAND-SIZE CLASS, ALASKA, 1968

Forest land			Commercial forest land by stand-size class			
Total	Non-Commercial	Commercial	Seedling sapling	Pole-timber	Saw-timber	Non-stocked
(Thousand acres)						
11,201	6,317	4,884	208	139	4,480	57
1,611	1,069	542	50	35	455	2
435	112	323	1	25	296	1
13,247	7,498	5,749	259	199	5,231	60
--	--	--	--	--	--	--
2,741	2,037	704	217	297	169	21
29,147	25,000	4,147	913	1,644	1,232	358
5,271	2,495	2,776	355	631	1,708	82
4,431	3,371	1,060	396	317	262	85
5,311	4,708	603	318	181	104	0
14,007	11,465	2,542	662	706	1,047	127
--	--	--	--	--	--	--
22,557	17,612	4,945	1,344	2,256	1,159	186
--	--	--	--	--	--	--
19,729	14,902	4,827	1,440	1,978	1,243	166
1,515	1,378	137	33	48	46	10
104,709	82,968	21,741	5,678	8,058	6,970	1,035
117,956	90,466	27,490	5,937	8,257	12,201	1,095

of Agriculture, United States Forest Service, Juneau, Alaska.

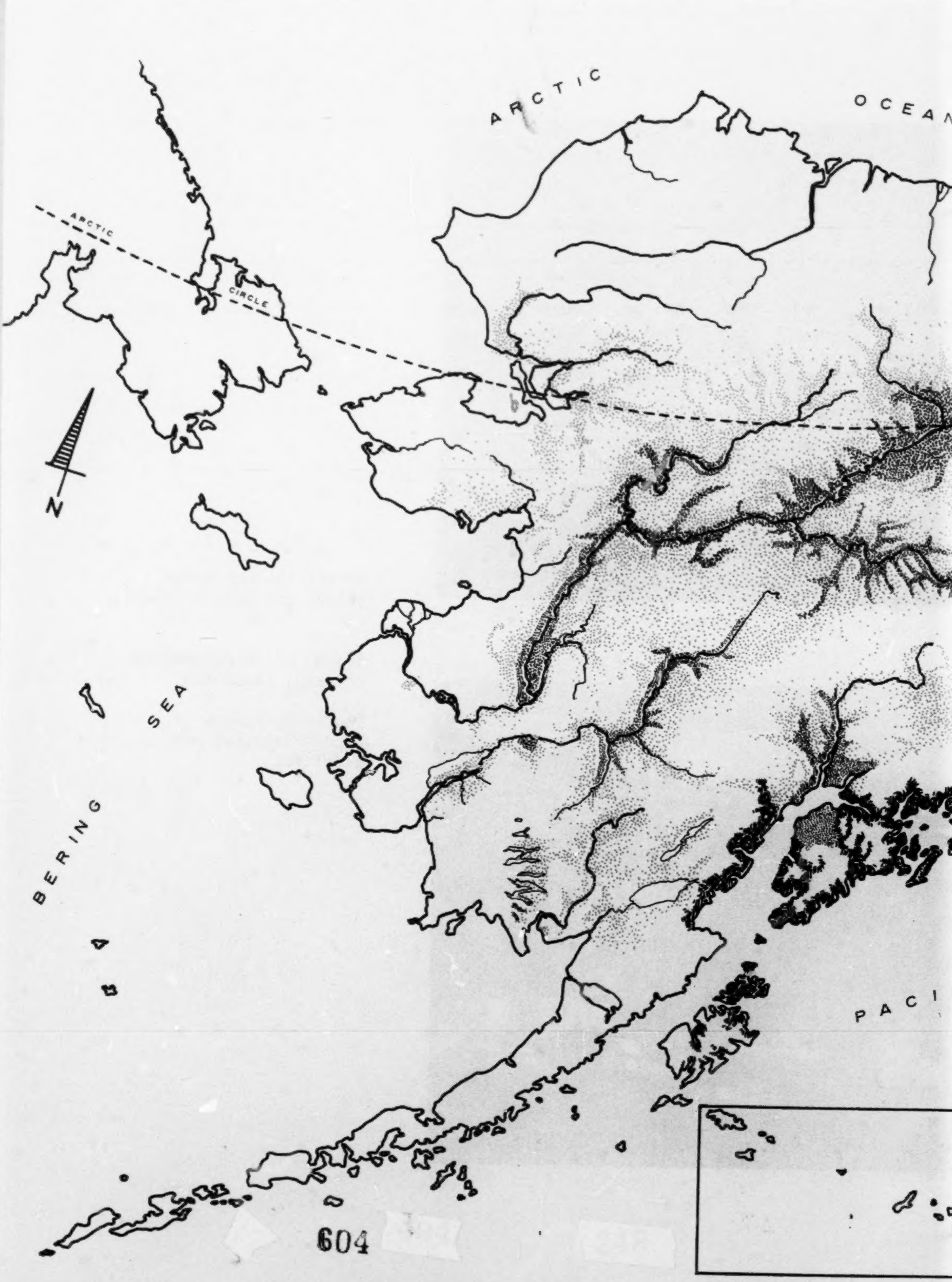
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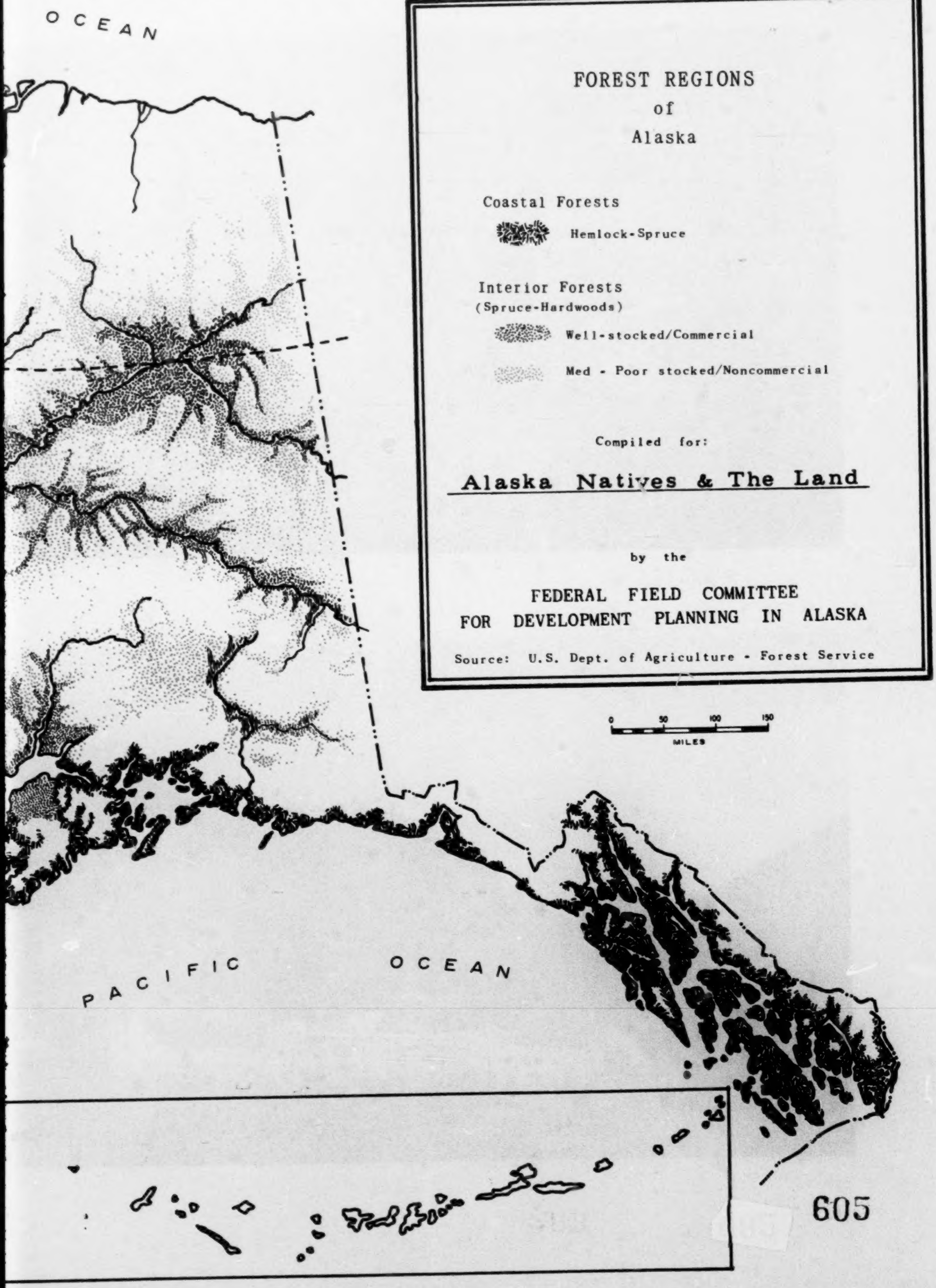
FIGURE IV - 48


OCEAN
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Hemlock-Spruce
Interior Forests
(Spruce-Hardwoods)
Well-stocked/Commercial
Med - Poor stocked/Noncommercial
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MILES
PACIFIC OCEAN

FOREST REGIONS
of
Alaska

Compiled for:

Alaska Natives & The Land

by the

FEDERAL FIELD COMMITTEE
FOR DEVELOPMENT PLANNING IN ALASKA

Source: U.S. Dept. of Agriculture - Forest Service

FISHERY

Elsewhere in this report, in the discussion pertinent to the economic condition of village Alaskans, reference is made to both the cash income and subsistence dependency of natives peoples upon the fishery resources of the state.

To provide further perspective to questions of Native economic condition and relevancy to land tenure solutions this discussion is concerned with three basic fishery resource considerations. These are:

... Alaska's overall position in the United States fishery - briefly highlighted;

... Important fishery habitat areas and resource considerations which might be affected by land settlement decisions - particularly those which might affect anadromous fish spawning areas; and

... The continued importance of the fishery resource in the Native subsistence pattern and the opportunity afforded, by this resource - above all others, to provide greater Native participation in the cash economy of Alaska.

Position in the United States Fishery[13]

Alaska, with fishery landings valued at $47 million, ranked third in the United States in 1967 behind California with $50.5 million, and Texas with $49.8 million. In volume of landings, Alaska with 370 million pounds also ranked third in 1967 behind California with 504 million pounds and Louisiana with 643 million pounds.

Kodiak, Alaska, is the third ranking fishing port in the United States. Ten million dollars in fishery landings were made at Kodiak in 1967. Nationally this is exceeded only by San Pedro, California, with $29 million, and New Bedford, Massachusetts, with $16 million.

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[13] U.S. Department of the Interior, Fish and Wildlife Service, Bureau of Commercial Fisheries, Juneau, Alaska, "Fishermen Newsletter," May 17, 1968.

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[14] *Ibid.*

The export of Alaska fishery products for 1967, mainly salmon and herring roe, was valued at $6.5 million. This represents 13 percent of the total United States fishery exports valued at $85 million.

Historically fisheries have been Alaska's most important natural resource.

> Since the inception of the Alaska fishing industry about 100 years ago, the cumulative value of Alaska fishery products has reached an estimated $4 billion or over 550 times the $7.2 million purchase price of Alaska from Russia. During the six-year period, 1961-1966, the annual wholesale value of Alaska's fishery products has averaged $145.7 million or 52 percent of the State's total natural resource production for the period.[14]

The commercial catch of fish and shellfish in Alaska dropped markedly in 1967. The 1967 catch of 370 million pounds valued at $47 million was the lowest since 1960 when 359 million pounds valued at $41 million were landed. Compared with 1966 landings of 582 million pounds valued at $82 million, volume dropped 36 percent and value 42 percent. This decline in 1967 landings was due to greatly reduced catches of salmon, king crab and herring which were cumulatively down 237 million pounds from 1966. Based on the 10-year period 1958-1967, the 1967 catch was 14 percent lower in volume and 8 percent lower in value than the 10-year average.

1967 was also the first year that salmon did not account for the largest portion of the total catch since the inception of the Alaska fishing industry some 100 years ago. Salmon landings totaled 131 million pounds while king crab totaled 135 million pounds. Salmon still accounted for the greatest value in the catch, however - $25 million compared to $13 million for king crab.

Briefly told the Alaska fishery includes the following significant elements:

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[14] *Ibid.*

... Halibut: The 1967 catch totaled 33 million pounds representing 54 percent of the total Pacific coast halibut catch in 1967.

... Herring: The 1967 catch totaled 9.5 million pounds continuing its rapid decline from a catch exceeding 100 million pounds in 1959. This decline is due principally to competetive economics rather than resource limitations.

... Herring roe: The 1967 take totaled 70 thousand pounds valued at a wholesale price of $120,000.

... Salmon: The 1967 catch totaled 131 million pounds. Its value to fishermen was $25 million while its wholesale value totaled $62 million. This represented the lowest volume of Alaska landings since 1899 when the industry was just beginning in Alaska and was comparable in economic impact with the 1959 season when the catch totaled 147 million pounds. Of significance, however, is species comparison with the 1966 landings of 333 million pounds. King salmon taken in 1967 were up 10 percent over 1966 while all others were down as follows: sockeye 44 percent, silvers 23 percent, pinks 74 percent and chums 44 percent.

... Salmon roe: The 1967 take approximated 6.4 million pounds valued at about $6 million.

... Shrimp: The 1967 catch totaled 46.3 million pounds. Its value to fishermen was $1.8 million while its wholesale worth totaled $5.4 million. This record catch reflects remarkable growth in this fishery despite market fluctuations.

... King Crab: The 1967 catch totaled 135 million pounds. Its value to fishermen was $13 million while its wholesale worth totaled about $37 million. Although down from the top production of 1966, 159 million pounds landed valued at $15.7 million, the 1967 catch still exceeded all others for the previous 10 years.

... Dungeness Crab: The 1967 catch totaled 11.4 million pounds. Its value to fishermen was $1.4 million while its wholesale worth approximated $3.3 million. Alaska Dungeness crab landings ordinarily fluctuate due to market conditions in the Pacific Northwest. In 1967, however, the 130 percent increase (over 1966) in Dungeness crab landings is attributable to the decline in availability of King crab more than anything else.

In addition to these major fishery elements developing industries exist for the Tanner crab and for scallops. Both of these industries will become highly important to the fishery economy.

But, despite new emerging fisheries and seasonal vagaries, salmon remains the most important fisheries resource in Alaska. Figure IV-49 illustrates this point.

The Native land claim issue and related land ownership and resource use conflicts can have significant impacts upon the future of the salmon industry.

Such impacts can arise from the management of lands that are the watersheds of important salmon spawning areas. Throughout certain sections of Alaska, and particularly on the Upper Kuskokwim River drainage and in Arctic boreal regions, areas may be endangered or virtually destroyed in short periods of time due to inappropriate land management endeavor such as logging on some sites, soils and slopes and improper road construction and seismic exploration activity which can cause heavy erosion and resultant river siltation.

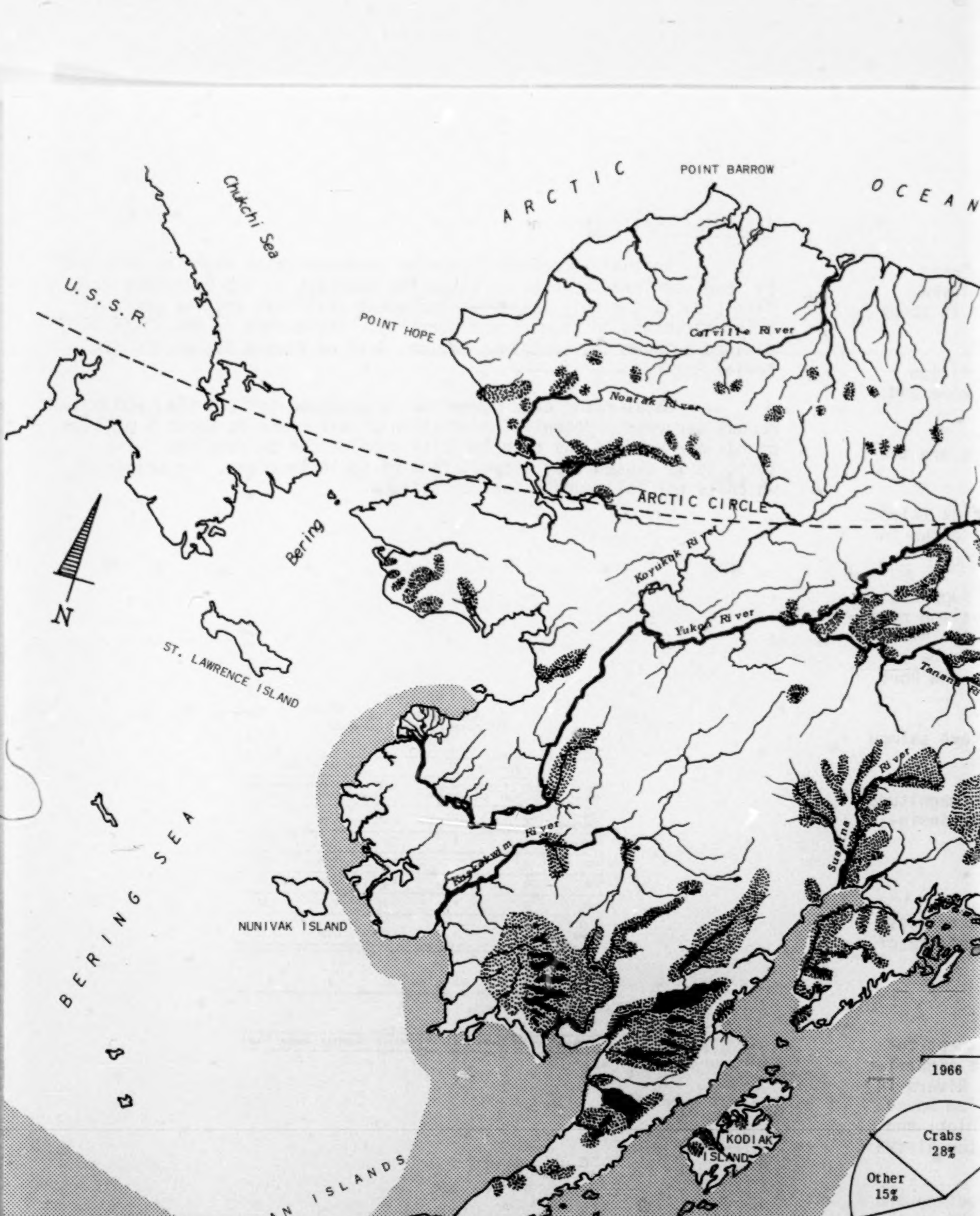
For this reason comment on Alaska's salmon spawning areas and statistics on regional salmon production and economic importance are included.

Pink and Chum Salmon Spawning Areas

Pink and chum salmon commonly spawn in the same streams. Major runs of pink and chum salmon occur in most streams of Southeastern Alaska, Prince William Sound, Cook Inlet, the Kodiak area, and in those along the south side of the Alaska Peninsula. These species are known to spawn in streams of the Aleutian Islands but, as commercial fishing on these runs by U. S. nationals is limited, their total significance is unknown.

Strong runs of pink salmon occur sporadically in Bristol Bay principally in the Nushagak and Kvichak systems. The abundance of pink salmon and their spawning sites northward of Bristol Bay to Point Hope are not well known. Pink salmon do spawn in the Kuskokwim, Yukon, Unalakleet, Inglutalik, Koyuk and Kobuk Rivers and probably in some other streams along this coast. This area is in the northern limits of the pink salmon range. The occurrence of pink salmon along the Arctic Coast eastward of Point Hope is unknown.

Chum salmon runs occur in most streams along the north side of the Alaska Peninsula and are most abundant in streams of Izembek Bay, Nelson Lagoon, Herendeen Bay, and Port Moller. A large run spawns in the Nushagak River and are of lesser importance in other streams tributary to Bristol Bay. Northward of Bristol Bay to Point Hope, chum salmon are the most abundant species of salmon. Very large numbers utilize the Kuskokwim and Yukon Rivers, and runs of varying size occur in most other streams along this section of the coast. Eastward of Pt. Hope along the Arctic Coast, a small run of chums is known to enter the Colville River. Utilization of other streams in this area is not known.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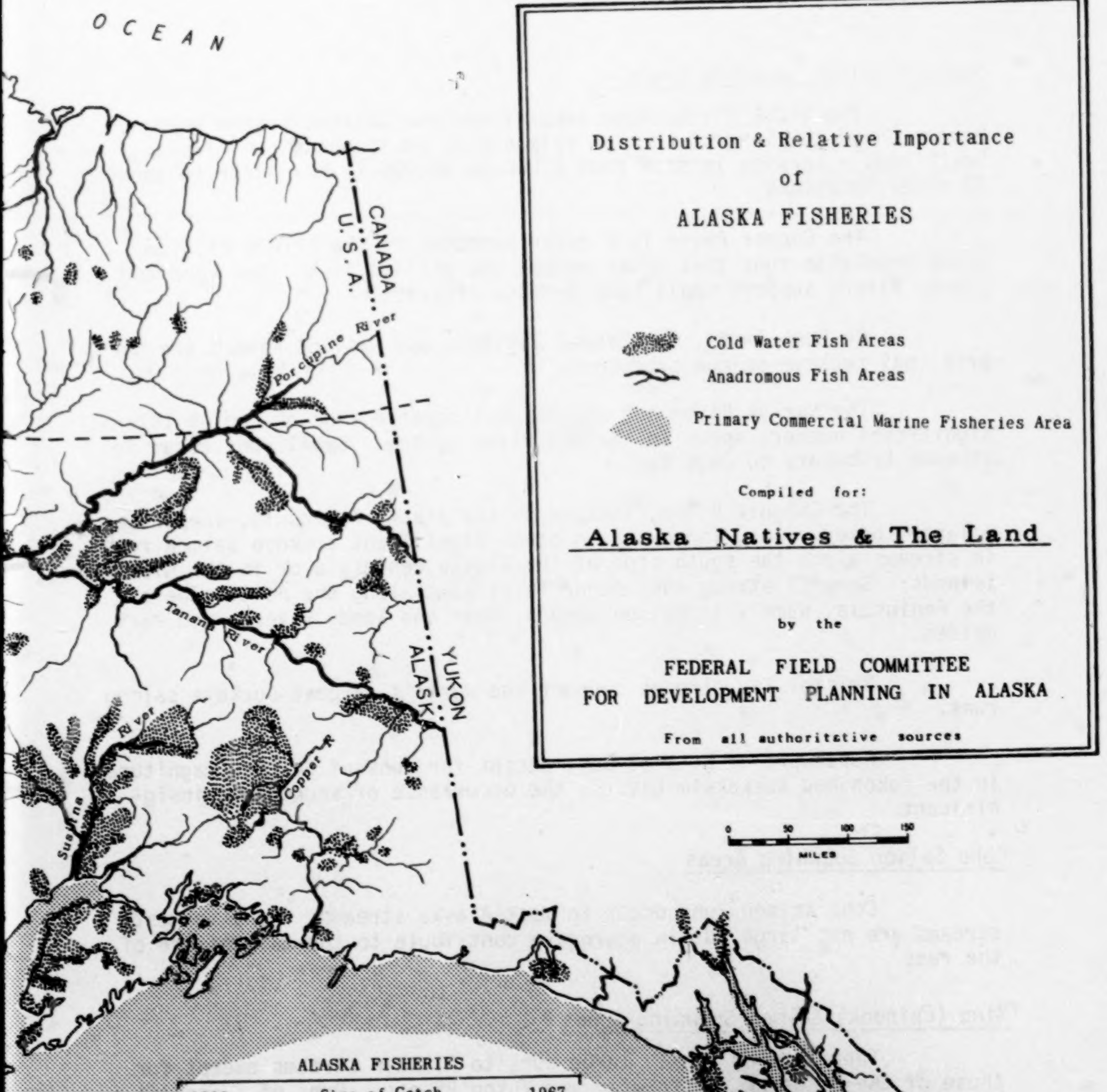
KODIAK ISLAND
ALEUTIAN ISLANDS
PACIFIC OCEAN
1966
Crabs 28%
Other 15%
Salmo 57%
Total 577 million

FIGURE IV - 49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ALASKA
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Distribution & Relative Importance
of
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Cold Water Fish Areas
Anadromous Fish Areas
Primary Commercial Marine Fisheries Area
Compiled for:
Alaska Natives & The Land
by the
FEDERAL FIELD COMMITTEE
FOR DEVELOPMENT PLANNING IN ALASKA
From all authoritative sources
0 50 100 150
MILES
ALASKA FISHERIES
Size of Catch
1966
Crabs 28%
Other 15%
Salmon 57%
Total 577 million pounds
1967
Crabs 40%
Other 25%
Salmon 35%
Total 370 million pounds

IGURE IV - 49

Sockeye Salmon Spawning Areas

The Situk River, near Yakutat and the Chilkat system near Haines, have the largest sockeye salmon runs in Southeastern Alaska. Small runs - varying in size from 2,000 to 40,000 fish - occur in about 70 other locations.

The Copper River is a major producer in the Prince William Sound area with runs that often exceed one million fish. The Robe and Eshamy Rivers support small runs in this district.

In Cook Inlet, the Kenai, Susitna, and Kasilof Rivers are the principal sockeye salmon producers.

The Karluk River has the largest sockeye runs on Kodiak Island. Significant numbers spawn in the Red River system. Small runs occur in streams tributary to Olga Bay.

The Chignik River, located on the Alaska Peninsula, supports a large sockeye run. There are no other significant sockeye salmon runs in streams along the south side of the Alaska Peninsula or in the Aleutian Islands. Several strong runs occur in streams along the north side of the Peninsula, namely in Nelson Lagoon, Bear and Sandy Rivers, and Port Heiden.

Bristol Bay streams support the world's largest sockeye salmon runs.

Northward of Bristol Bay, except for runs of unknown magnitude in the Yukon and Kuskokwim Rivers, the occurrence of sockeye is insignificant.

Coho Salmon Spawning Areas

Coho salmon runs occur in most Alaska streams. Runs to most streams are not large but in aggregate contribute to the maintenance of the runs.

King (Chinook) Salmon Spawning Areas

There are no really large runs to Alaskan streams except for those of the Nushagak, Kuskokwim, and Yukon Rivers. Runs of a significant level of magnitude occur in the Stikine, Taku, and Alsek Rivers in the Southeastern area; in the Copper River in the Prince William Sound district; in the Susitna, Kenai, and Kasilof Rivers in Cook Inlet; and in the Karluk River on Kodiak Island and in Chignik River on the Alaska Peninsula.

Figures IV - 50 to IV - 56 cite salmon fishery production and catch statistics regionally; potential salmon production figures in these tables may be considered conservative, given adequate financing for habitat manipulation and possible hatchery production the potential return could be several times that cited. A graphic portrayal of important spawning rivers and streams is shown in Figure IV - 49.

Estuarine Shellfish

Another important fisheries resource which might be affected by land settlements abutting estuarine habitats is the Dungeness crab. This crab is the only estuarine dependent shellfish species presently being harvested in significant quantity. The extent of the catch is divided between the Southeast Region, Gulf of Alaska Region and the Kodiak Region.

Total razor clam commercial production is less than 100,000 pounds per year. Potential production of all clams is about 5 million pounds per year if the clam toxicity problem can be resolved. The toxicity is caused from accumulation of toxin in clams, the origin of which is not fully understood by science.

FIGURE IV - 50

SALMON FISHERY STATISTICS
GULF OF ALASKA & COPPER RIVER REGION

Salmon	Production		Millions of Fish		
Species	Percent of State Total	Percent of National Total	Total Population	Population Potential	Commercial Catch
King (Chinooks)	2	1	0.025	0.05	--
Sockeye	5	5	1.0	2.0	0.75
Coho	13	7	0.35	0.50	0.25
Pink	12	11	4.60	13.0	3.70
Chum	9	9	0.80	2.5	0.52
Total Salmon	9	9	6.775	17.05	5.22
Fresh water Species	b	b	a	a	b

[a] No basis for estimating
[b] Negligible

Source: United States Bureau of Commercial Fisheries, Juneau, Alaska.

FIGURE IV - 51

SALMON FISHERY STATISTICS
SOUTHEAST REGION

Salmon

	Production		Millions of Fish		
Species	Percent of State Total	Percent of National Total	Total Population	Population Potential	Commercial Catch
King (Chinooks)	49	14	0.36	0.5	0.27
Sockeye	6	5	1.12	3.5	0.84
Coho	64	34	1.65	3.0	1.21
Pink	44	42	18.35	60.0	13.75
Chum	33	32	2.60	11.0	1.96
Total Salmon	33	30	24.1	78.0	18.04
Fresh water Species	95	b	a	a	0.01

[a] No basis for estimating
[b] Negligible

Source: United States Bureau of Commercial Fisheries, Juneau, Alaska.

FIGURE IV - 52

SALMON FISHERY STATISTICS
ALEUTIAN REGION

Salmon

	Production		Millions o	
Species	Percent of State Total	Percent of National Total	Total Population	Populati Potenti
King (Chinooks)	2	1	0.015	).025
Sockeye	5	5	1.1	2.5
Coho	3	1	0.2	0.4
Pink	7	7	3.2	5.0
Chum	15	14	1.1	2.0
Total Salmon	8	7	5.615	9.925
Fresh water Species	b	b	a	a

[a] No basis for estimating
[b] Negligible

Source: United States Bureau of Commercial Fisheries,

FIGURE IV - 54

SALMON FISHERY STATISTICS
KODIAK REGION

Salmon

	Production		Millions of Fish		
Species	Percent of State Total	Percent of National Total	Total Population	Population Potential	Commercial Catch
King (Chinooks)	--	--	0.01	0.03	--
Sockeye	6	6	1.8	8.0	0.89
Coho	3	1	1.5	2.5	0.05
Pink	28	27	11.8	20.0	8.80
Chum	16	16	1.5	3.0	0.95
Total Salmon	20	18	16.61	33.53	10.69
Fresh water Species	b	b	a	a	b

[a] No basis for estimating
[b] Negligible

Source: United States Bureau of Commercial Fisheries, Juneau, Alaska.

FIGURE IV - 55

SALMON FISHERY STATISTICS
BRISTOL BAY REGION

Salmon

	Production		Millions of	
Species	Percent of State Total	Percent of National Total	Total Population	Population Potential
King (Chinooks)	18	5	0.15	0.25
Sockeye	70	64	20.0	100.0
Coho	1	1	0.1	0.2
Pink	2	2	1.5	2.5
Chum	11	10	1.2	3.0
Total Salmon	22	20	22.95	103.95
Fresh-water Species	b	b	a	a

[a] No basis for estimating
[b] Negligible

Source: United States Bureau of Commercial Fisheries, Ju

FIGURE IV - 52

SALMON FISHERY STATISTICS
ALEUTIAN REGION

non

	Production		Millions of Fish		
ies	Percent of State Total	Percent of National Total	Total Population	Population Potential	Commercial Catch
g inooks)	2	1	0.015	0.025	0.01
keye	5	5	1.1	2.5	0.79
o	3	1	0.2	0.4	0.05
k	7	7	3.2	5.0	2.34
m	15	14	1.1	2.0	0.86
al mon	8	7	5.615	9.925	4.05
sh ter cies	b	b	a	a	b

[a] No basis for estimating
[b] Negligible

Source: United States Bureau of Commercial Fisheries, Juneau, Alaska.

FIGURE IV - 53

SALMON FISHERY STATISTICS
COOK INLET REGION

Salmon

	Production		Millions of Fish		
Species	Percent of State Total	Percent of National Total	Total Population	Population Potential	Commercial Catch
King (Chinooks)	2	1	0.035	0.25	0.01
Sockeye	8	8	1.85	3.5	1.22
Coho	14	8	0.36	0.6	0.27
Pink	7	6	2.75	5.0	2.03
Chum	13	12	1.0	2.0	0.75
Total Salmon	8	7	5.995	11.35	4.29
Fresh water Species	b	b	a	a	b

[a] No basis for estimating
[b] Negligible

Source: United States Bureau of Commercial Fisheries, Juneau, Alaska.

FIGURE IV - 55

SALMON FISHERY STATISTICS
BRISTOL BAY REGION

on

	Production		Millions of Fish		
ies	Percent of State Total	Percent of National Total	Total Population	Population Potential	Commercial Catch
nooks)	18	5	0.15	0.25	0.10
eye	70	64	20.0	100.0	10.38
	1	1	0.1	0.2	0.03
	2	2	1.5	2.5	0.75
	11	10	1.2	3.0	0.52
l on	22	20	22.95	103.95	11.82
h- ter cies	b	b	a	a	b

[a] No basis for estimating
[b] Negligible

Source: United States Bureau of Commercial Fisheries, Juneau, Alaska.

FIGURE IV - 56

SALMON FISHERY STATISTICS
ARCTIC-YUKON-KUSKOKWIM REGION*

Salmon

	Production		Millions of Fish		
Species	Percent of State Total	Percent of National Total	Total Population	Population Potential	Commercial Catch
King (Chinooks)	27	8	0.35	0.75	0.15
Sockeye	--	--	a	a	0.01
Coho	2	1	0.15	0.25	0.03
Pink	--	--	0.1	0.25	0.02
Chum	3	3	1.4	2.5	0.18
Total Salmon	1	1	2.0	3.75	0.39
Fresh-water Species	b	b	a	a	b

[a] No basis for estimating
[b] Negligible

*Combines several study regions -- Arctic Slope, Bering Straits, Southwest Coastal Lowland, Upper Yukon-Porcupine and Upper Kuskokwim.

Source: United States Bureau of Commercial Fisheries, Juneau, Alaska.

No basis for recreational take of clams or crabs has been established although it is recognized that thousands of Alaskans gather on the beaches at low tide to collect the fine razor clams.

FIGURE IV - 57

DUNGENESS CRAB STATISTICS

Region	Production		Millions of Pounds	
	Percent of State Total	Percent of National Total	Harvest Potential	Commercial Catch
Southeast	36	10.4	5.0	3.1
Gulf of Alaska and Kodiak	64	18.1	25.0	5.4
Total	100	28.5	30.0	8.5

Source: United States Bureau of Commercial Fisheries, Juneau, Alaska.

Sport Fishing

Information on sport fishing is not available on an area-wide basis for any region of Alaska except the Southeast Alaska salmon fishery. Although many places, such as the Kenai Peninsula and Bristol Bay, have very intensive and productive sport fisheries, they are localized and the catch is not in terms of commercial catches or total populations of the region. Therefore, it cannot be quantified readily.

Subsistence Fishing

The average subsistence catch of salmon and freshwater species during the past decade has been about 0.75 million fish. The present catch for subsistence purposes on a statewide basis is estimated to be only slightly more than half of the catch level of the 1930's and 1940's, although in some areas it exceeds the aboriginal take of a century ago.

Earlier in this report the importance of the fishery resource to the village economy and to the individual Native subsistence diet and livelihood pattern has been stressed. There is no need to repeat the story here with emphasis on fishery itself, but this is the place to make one exceedingly important point.

Native "use and occupation" or "use and occupancy" of the land was in reality Native "utilization" of the biotic resource of the land and water. It was upon this biotic resource--primarily the fisheries and wildlife--that the Alaska Native depended for survival (and today, in many places, remains so dependent).

Despite continued reservations in law (treated later in Chapter V) that Native "use and occupation" would not be disturbed until later decreed by the Congress, *this action has in fact taken place.*

With statehood, legislative jurisdiction over fisheries and wildlife passed to the State of Alaska and this single fact constituted a "taking" of resources or a "disturbance" of Native "use and occupancy" of the highest import. On the whole state authority has recognized the importance of fish and wildlife to Native survival and subsistence. Accordingly, in most places state law and regulation have recognized subsistence need. There, however, have been instances of regulations issued contrary to Native subsistence needs which have forced people to violate the law in order to survive. Again, where this has occurred, enforcement officers have frequently ignored the violations. Nevertheless the die has already been legislatively cast to permit the regulation of the taking of fishery resources so as to favor commercial or recreational interests above the subsistence dependency requirements of Native people.

This has happened on several occasions with regard to fisheries resources.

Today in all of Alaska, with all its resources, it is the fishery resource alone which offers any significant broad commercial economic base to the Alaska Native.

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RECREATION

Recreation may be Alaska's most promising long-term renewable resource. Perhaps nowhere else in the world, and certainly not in the other 49 United States, can be found such a variety and quantity of outstanding recreation resources as exist in Alaska. There is opportunity here for almost any type of recreation activity in vogue today. Fortunately, from the recreation standpoint at least, not much of the state has been developed. Consequently, there is still elbow room, and there is still time to plan for the proper development of the recreation resource.

Recreationists interested in sightseeing can have a field day in Alaska where awe-inspiring scenery is considered commonplace. Southeast Alaska, which is composed almost entirely of large, timber-covered islands, has as a backdrop a narrow strip of mainland rising steeply from the water to 19,000-foot, snow-capped mountains and tremendous glacial ice fields. The area bordering Prince William Sound enjoys a similar setting, but the islands, mountains, and glaciers are somewhat reduced in scale.

The vast mainland of Alaska is a land of scenic superlatives. The coastal mountains in the south give way to the Alaska Range, which includes 20,320-foot Mount McKinley, the highest mountain on the North American continent. Beyond these mountains lies the wide valley of the Yukon, third largest river in North America. The Yukon, which begins its 2,400-mile-long journey in Canada, cuts a wide arc across the entire width of central Alaska before emptying into the Bering Sea.

North of the Yukon, the Brooks Range rises to elevations of 7,000 to 10,000 feet. The rivers draining its northern slopes flow into the Arctic Ocean.

The Aleutian Islands begin with Unimak Island at the tip of the Alaska Peninsula and curve east-southeast in a gentle arc for nearly 900 miles to Attu, the easternmost island. The chain contains some 200 treeless islands, largely mountainous, with irregular shorelines and rocky cliffs.

One of Alaska's principal attractions to out-of-state recreationists is its wildlife resource. Once again, variety is the key feature. Big-game hunters can choose between brown bear or polar bear, moose or caribou, and mountain sheep or mountain goats, to name but a few. In addition to hunters, others interested in photography or

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wildlife observation have unlimited opportunity to see not only game animals and birds, but protected species as well. Alaska's many wildlife refuges are ideally suited to such recreation activities.

Alaska is known throughout the world for its fine sport fishery. Salmon, steelhead, and sea run Dolly Varden can be caught in saltwater or in freshwater streams and lakes. There are unique freshwater species, such as the sheefish and Arctic grayling, as well as the more familiar cutthroat trout, lake trout, northern pike, and whitefish.

As one would expect from its far-north location, the opportunities for winter sports are almost unlimited. In addition to the usual activities, such as skiing, snowshoeing, and ice skating, a new sport, snowmobiling, is catching on. These mechanical sleds are rapidly replacing the more picturesque and traditional dog sleds as a means of transportation and as a type of recreation.

Mountain climbing is an important recreation activity in this state. To a great extent, this results from Mount McKinley's being the highest mountain (20,320 feet) in North America, and thus becoming an almost irresistable target to mountain climbers, as are many other mountains in Alaska.

The boating opportunities are extensive and varied, especially among the many islands of southeastern Alaska. In other parts of the state, the large rivers, such as the Yukon, were the historic routes of travel into the interior. Today these same rivers are proving to be popular for float trips or canoe trips. The numerous lakes also offer boating opportunities.

Other major recreation activities include hiking, camping, picnicking, and driving for pleasure. As far as this last-named activity is concerned, it can be a frustrating experience in the sections of the state where roads are few or, in many instances, nonexistent. In the entire state, there are only about 3,500 miles of roads. Because of this situation, many residents fly their own planes. A recent recreation-demand survey conducted by the state branch of Parks and Recreation recognized this fact and included a category entitled "flying for pleasure."

For most out-of-state tourists, the trip to Alaska in itself can be an exciting recreation experience. Those traveling by air enjoy breathtaking views of Alaska's mountains and glaciers. The ferry boats and cruise ships provide a close-up view of the many southeast Alaska islands, the unique shoreline, and the impressive glaciers as the boats follow the scenic inside passage.

These varied recreational attractions have a direct impact upon the economy of the state and upon land tenure situations--public and private. Economic impact is also directly related to a balanced mix of recreational facilities and opportunities which attract recreational enthusiasts and sightseers in all walks of life, all ages and of all interests.

Transportation modes and costs and their limitations exert great influence upon the attraction of recreation-minded people to Alaska. At present deficiencies in this regard limit accessibility to lower-income-level groups. Similarly, the present level of availability of private hotels, lodges, and motels (100 in the state[15]) must be considered inadequate to serve future projected levels of tourists to Alaska.

Predictions by the University of Alaska are that by 1975 tourist visitation will have increased to 450,000 from a 1964 base of 75,000. By 1980, 650,000 tourists are expected to reach Alaska, adding an additional 14,600 new jobs to the local economy.[16] It is estimated that in 1964 $12,000,000 was injected into the Alaska economy due to tourism and recreational attraction. The projection of dollar economic contribution from recreational sources by 1980 is $225,000,000.

Finally, it must be noted that the recreational resources of Alaska have different meanings to visitors and residents. Figures IV - 58 and IV - 59 illustrate these preferences.

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[15] Kenai Borough Recreation Report, 1968 (draft).
[16] University of Alaska, *Tourism in Alaska,* 1965.

FIGURE IV - 58

REASONS FOR VISITING ALASKA

Reason*	Choice of Prior Visitors	Choice of New Visitors
Scenery and Wilderness	75 %	83 %
Vacation in uncrowded conditions	44	57
Travel on Alaska Highway	36	50
Opportunity to fish	40	46
Opportunity to hunt	32	40
Visit friends or relatives	37	30
Adventure of Last Frontier	34	31
Possibly move here to live	26	31
See Mt. McKinley	21	25
Traveling north to Arctic Circle	16	18
Meeting Eskimos	11	19
Other	15	6

*Multiple-choice type of questions.

Source: "Traveler Profiles," State of Alaska, December, 1964.

FIGURE IV - 59

FAVORITE RECREATIONAL ACTIVITIES OF RESIDENT PARTICIPANTS (STATE TOTALS)

	Summer	No. of Respondents	Percent
1.	Freshwater fishing	271	20
2.	Swimming - Lake, Pond, Stream	166	13
3.	Picknicking	120	9
4.	Camping - Developed Area	109	8
5.	Outdoor Games and Sports	83	6
6.	Saltwater Fishing	77	6
7.	Motor Boating	67	5
8.	Hiking	55	4
9.	Big Game Hunting	48	4
10.	Nature Study	25	2
11.	Water Skiing	25	2
12.	Driving for Pleasure	20	2
13.	Walking for Pleasure	18	1
14.	Berry Picking	16	1
15.	All Others	167	13
16.	None	50	4
	Totals	1,317	100%

	Winter		
1.	Ice Skating	264	20
2.	Downshill Skiing	175	13
3.	Big Game Hunting	144	11
4.	Sledding/Toboganning	62	5
5.	Snow Vehicle	31	2
6.	Ice Fishing	27	2
7.	Walking for Pleasure	23	2
8.	Cross Country Skiing	16	1
9.	Snow Shoeing	13	1
10.	Hiking	12	1
11.	Dog Sledding	10	1
12.	Outdoor Games and Sports	10	1
13.	Small Game Hunting	9	1
14.	Driving for Pleasure	7	1
15.	All Others	69	5
16.	None	445	33
	Totals	1,317	100%

Source: Alaska Public Outdoor Recreation, State of Alaska, Department of Natural Resources, March, 1967.

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EXISTING RECREATION ATTRACTIONS AND USE

At the time the Alaska Statehood Law was enacted in 1958, the federal government owned 99.8 percent of the land in the new state. Since then, several million acres have been selected by the state, and several thousand additional acres have gone into private ownership. However, the federal government is still the major land owner, and it is on these federal lands that most of Alaska's recreation areas and facilities are to be found.

The Southeast, Gulf of Alaska, Cook Inlet, Bristol Bay, Kodiak, Upper Yukon-Porcupine, Copper River and Tanana Regions of the state bear most of Alaska's recreational pressure. Within these regions the state transportation network is, although inadequate, more advanced than in the remaining regions. About 85 percent of the state's population[17] and 98 percent of the developed tourist and recreation facilities exist in these areas.

FIGURE IV - 60

TOURIST PREFERENCE AREAS

AREA	% OF TOURISTS VISITED
Southeast Alaska	52
Katmai-Kodiak	3
Arctic and Western Alaska	13
Kenai Peninsula	12
Fairbanks - Mt. McKinley	54
Anchorage-Valdez-Cordova	53

Source: "Traveler Profiles," State of Alaska, December, 1964.

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[17] State of Alaska, Department of Health and Welfare, *Population of Election Districts: 1960,* Bureau of Vital Statistics, Juneau, Alaska.

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The Tongass and Chugach National Forests, Mount McKinley National Park, Glacier Bay National Monument, and the Kenai National Moose Range are presently the most intensively developed recreational areas of the state, providing a wide range of attractions including trails, campgrounds, visitor centers, interpretive stations, winter sport areas, public cabins, canoe routes, and private catering developments.

Developed recreational attractions on state land and public domain are scattered along the highway system. These sites are located where residents and tourists can take advantage of fishing streams, hunting areas, and marked trail routes. The sites are generally small, 10 to 20 camping units, and are overcrowded most of the season. Maintenance of public access roads and trails is minimal. Canoe trails have been designated, but only a few portages have been blazed and few landings marked other than on the Kenai National Moose Range. Comprehensive planning for these lands is just beginning.

Private recreation developments, statewide, consist almost entirely of lodges with associated hunting and fishing guide services, traveler accommodations and, on the coast and waterways, boat rentals. Figure IV - 61 shows the use of existing recreation sites for 1967. The figures are in visitor days (12 hours) as defined by the U. S. Department of the Interior, Bureau of Outdoor Recreation.

In the seven remaining regions of the state, the development of recreational opportunities has been limited by access. Scattered private, military and public sites provide limited accommodations. Other than such Native centers as Nome, Kotzebue, Barrow and Fort Yukon which receive tourists via regularly scheduled aircraft, the lakes, rivers and hunting areas of the state are visited by charter or private aircraft. Visitors to these areas live under primitive conditions with conveniences limited to those that may be delivered by aircraft.

Federal Agency Areas and Programs

U. S. Forest Service

Alaska's two national forests, the Tongass and Chugach, are the nation's largest and second largest national forests respectively. The Tongass National Forest, comprising 16,015,904 acres, is made up of most of the islands in southeast Alaska, together with a strip of mainland consisting of high mountain peaks, deeply cut fiords, and glacial ice fields.

The Forest Service has developed ten campgrounds and sixteen picnic areas, which are accessible by car, near the region's principal cities. On Douglas Island near Juneau, a skiing area has been developed on national forest land under special-use permit. There are 120 recreation trails on the forest with a total trail mileage of 650 miles.

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FIGURE IV - 61

1967 VISITOR DAYS OF USE FOR THE 8 REGIONS**

Organization*	Visitor Days
National Forests	1,141,100[a]
National Parks	94,000[b]
Kenai National Moose Range	423,000[c]
Bureau of Land Management	206,900[d]
State of Alaska	1,500,000[e]
Total	3,365,000

*Use data covering private developments are not available.
**The eight regions are: Southeast, Gulf of Alaska, Cook Inlet, Bristol Bay, Kodiak, Upper Yukon-Porcupine, Copper River, and Tanana.

Sources:
[a] From National Forest Regional Office Juneau Records, May 28, 1968.
[b] From National Park Headquarters, Anchorage, Records, June 21, 1968.
[c] From Kenai National Moose Range Office Records, Kenai, June 21, 1968.
[d] From BLM Office Records, Anchorage, June 21, 1968.
[e] Estimate based on State Office Records, Anchorage, from 1965 Use Data.

To facilitate recreation use of the more inaccessible portions of the forest, more than 100 cabins have been constructed on the shores of lakes and saltwater bays. These cabins are available to recreationists on a reservation basis for periods of up to seven days. Access is by float plane or boat.

The Forest Service has designated two recreation areas and two scenic areas on the Tongass National Forest. The Mendenhall Glacier Recreation Area is located at the edge of the glacier only 15 miles from Juneau. It is the site of the Forest Service's first Visitor Center. The forest naturalists at the center interpret the natural history of the glacier and surrounding area to forest visitors. The other recreation area is Admiralty Lakes Recreation Area, located on the island of the same name. It is accessible by float plane from Juneau.

Tracy Arm Fiord's Terror Scenic Area is located on the mainland south and east of Juneau. Accessible by boat, the area features a 30-mile-long, iceberg-filled fiord with steep canyon walls rising as high as 2,400 feet above the water. Also included are high, snow-clad peaks and glaciers. Rudyerd Bay-Walker Cove Scenic Area is a similar area located on the mainland east of Ketchikan.

In addition to the recreation activities resulting from the provision of developed facilities, the Tongass National Forest also provides opportunity for excellent hunting and fishing. Principal big-game species include the famous Alaska brown bear, black bear, moose, mountain goat, and deer. The forest also contains many upland game birds, such as grouse and ptarmigan, and the many lakes and sheltered bays are utilized by migratory waterfowl.

Fishing is one of the more popular recreation activities in southeast Alaska. King and coho salmon are the most important salt-water fishery. Freshwater game fish include the cutthroat, rainbow, Dolly Varden, steelhead, and eastern brook trout.

The Chugach National Forest, 4,726,000 acres in size, is located on the mainland which borders Prince William Sound and the Gulf of Alaska, and on the many islands found in that area. It also includes Afognak Island, situated south and west of the remainder of the forest between Kodiak Island and the Kenai Peninsula.

The recreational opportunities on the Chugach are similar to those described for the Tongass National Forest. There are fifteen developed campgrounds and seven picnic areas accessible by road, but there are only about twenty outlying cabins available for recreation use. The Chugach has 38 recreation trails, totaling 156 miles. At Portage Glacier, about 50 miles from Anchorage, there is a visitor center manned by forest naturalists during the tourist season.

The big-game hunting opportunities are a bit more varied than on the Tongass. In addition to brown bear, black bear, moose, mountain goat and deer, Dall sheep and elk also are hunted. The elk were introduced on Afognak Island in 1929. Since then, the original group of eight animals has increased to more than a thousand and an annual hunt is permitted. Fishing is also an important recreation activity on this forest.

A ski area is located at Alyeska in the northwest corner of the forest. Because it is only about thirty miles from Anchorage, it receives heavy use during the long winter season.

There are no formally designated wilderness areas on either of Alaska's two national forests. Because there are so few developments on these forests at the present time, much of the area is wilderness without designation. However, this situation is rapidly changing.

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The recreation use of the Tongass and Chugach National Forests is increasing at a rate faster than the national average for the Forest Service. In 1967 the two forests in Alaska recorded 1,141,000 visitor days of recreation use. The Forest Service estimates that by the year 2000 the annual visitation figure may be as high as five million.

National Park Service

The National Park Service manages three areas in Alaska--Mount McKinley National Park, Katmai National Monument, and Glacier Bay National Monument--in addition to historically important Sitka National Monument. These areas are complemented by fifteen sites in Alaska that are now Registered National Historic Landmarks, and one National Natural Landmark--not federally owned or administered. Ten additional sites have also been declared eligible for the registry. In 1965 approximately 49,800 visits were recorded to areas of the National Park System in Alaska. This figure increased in 1966 to 75,700 and 94,100 visits during 1967.

Glacier Bay National Monument, established by Presidential proclamation on February 26, 1925, is located about 100 miles northwest by boat from Juneau. Glacier Bay itself lies between two parallel mountain ranges--on the east the St. Elias Range and to the west the Fairweather, culminating in 15,320-foot Mt. Fairweather.

Some twenty glaciers, including two-mile-wide Muir Glacier and many others almost equally impressive, illustrate all stages of glacier activity. Along the coast of the 50-mile fiord, the roar of the ice avalanche is almost constant, punctuated here and there by cold, still moments of silence. Inland forests of spruce and hemlock contrast sharply with the stark, snow-clad mountains. Wildlife is abundant--Alaska brown bear, grizzlies, black bear, and many smaller animals. Mountain goats climb the lofty crags, while porpoises, spouting whales and seals swim among the icebergs in the glacial bays and inlets. Because of its many natural qualities and its scientific importance, the National Park Service hopes to redesignate the area as Glacier Bay National Park.

Visitor figures have been increasing as the result of recently constructed accommodations. In the first nine months of 1967 nearly 7,000 visits were already recorded. The September comparison shows a 75 percent increase over the same in 1966.

Boat and plane provide the only access to the monument. Virtually all intra-park travel is by boat.

The new concessioner-operated Glacier Bay Lodge at Bartlett Cove provides for 64 guests. The principal interpretive facility here is a fifty-passenger cruise boat which travels daily to Muir Glacier with a park naturalist aboard. There are also frequent naturalist programs at the lodge.

Katmai National Monument, on the Alaska Peninsula, is remote from civilization. It contains 100 miles of ocean bays, fiords, and lagoons backed by glacier-covered peaks, crater lakes, and smoldering volcanoes. In 1918, the monument was established to include the site of a great volcanic eruption and the now relatively dormant Valley of Ten Thousand Smokes. In 1931, the monument was enlarged to protect some of the wildlife of the Alaska Peninsula. In 1942, the inlets off the seacoast were added, and today Katmai National Monument comprises more than 4,200 squre miles.

The only easy way to reach the monument is by air. At least three commercial airlines serve the King Salmon air terminal, which is outside the monument, 35 miles from the Brooks River Camp. From King Salmon, bush planes on floats make regular flights to Brook River and Grosvenor Lake camps.

Fishing, sightseeing, camping, and canoeing are among the principal visitor activities. Monument visitors also have the opportunity to inspect the recent archeological excavations of prehistoric Eskimo pit houses in the vicinity of Brooks River. A Four-wheel-drive bus is provided by the concessioner to transport visitors by a scenic trail some 25 miles to the Valley of Ten Thousands Smokes.

Katmai National Monument recorded 900 visits in 1966. There are presently accommodations at Brooks River and Grosvenor camps for only 75 visitors.

Mount McKinley National Park contains 3,030 square miles of subarctic wilderness dominated by 20,320-foot Mount McKinley, the highest and most massive mountain in North America. Wildlife of the park include: caribou, Dall sheep, moose, grizzly bear, wolf, wolverine, and lynx.

From the Richardson Highway to Paxson, the Denali Highway (passable from about June 1 to September 15) traverses a distance of some 160 miles to the park entrance station. Between Anchorage and Fairbanks, passenger service is provided by the Alaska Railroad. An airstrip near the Mount McKinley railroad station accommodates light planes.

The concessioner-operated hotel near the railroad station can accommodate 180 guests, while seven campgrounds in the park provide space for over 100 campsites. There are naturalist programs at the hotel and vicinity, and dog-sled demonstrations at nearby park headquarters; but the principal visitor activity at the park depends upon the use of the single park road, extending 88.6 miles from the entrance station to Wonder Lake. Buses, provided by the concessioner, enable hotel visitors to make daily round trips to the Eielson visitor center to observe the tundra wildlife and get a glimpse of Mount McKinley. Campers traveling beyond this point to Wonder Lake are rewarded with a climactic view of the mountain. The visitor count has stood rather consistently at about the 40,000 mark during the past few years.

Sitka National Monument, near the mouth of the Indian River on the western shore of Baranof Island, encompasses some 54 acres and commemorates the six-day battle fought in 1804 between the Russian settlers and the Tlingit Indians. The Indians lost the battle, their independence, and gradually much of their culture and way of life. The Russians won an overseas empire, a source of furs, and a strong-hold on the American continent.

The monument, designated a public park in 1890 and a national monument in 1910, preserves and interprets the fort and battle site, the totemic art and culture of the Natives, and the history of Russia's American adventure.

At the visitor center, various exhibits and audio-visual programs depict the story of Native history and culture and describe life in Sitka as it was during the days of Russian settlement.

Bureau of Sport Fisheries and Wildlife

There are 17 units of the National Wildlife Refuge System located in Alaska. They range in size from the 8,900,000-acre Arctic National Wildlife Range and the 2,720,200-acre Aleutian Islands National Wildlife Refuge, first and second in size respectively among all the units in the system, down to tiny 42-acre Hazy Islands National Wildlife Refuge. The areas were set aside to protect and provide habitat for several different types of game animals as well as for migratory waterfowl.

Although the refuge were established primarily for the welfare and enhancement of their wildlife values, compatible recreational uses also are permitted. Recreation sites and facilities have been developed, such as campgrounds, picnic areas, hiking trails, and canoe trails. In 1967 the annual recreation use of Kenai Moose Range was 307,870.

The total recreation visitation to the Alaskan National Wildlife Refuges in 1967 was 334,870. The visits to Kenai National Moose Range alone accounted for 92 percent of this figure. Access problems limit recreation visits to the other 16 refuges.

Bureau of Land Management

The Bureau is the largest federal land administrator in Alaska. In 1965, there were 306,038,018 acres of and, or 95 percent of the entire state, under Bureau of Land Management administration.

The Bureau has developed Eklutna Basin Recreation Area, located about 30 miles northeast of Anchorage. It contains three separate campgrounds, all situated on the shores of scenic Eklutna Lake. Sixteen other campgrounds have been developed in the vicinity of Anchorage and Fairbanks, and one other is located north of Nome on the Seward Peninsula.

Other important Bureau recreation developments on public-domain lands include the White Mountains Trail, an 80-mile-long hiking trail; restoration of three historic gold rush trails, the Chilkoot, White Pass, and Dalton trails; the Harrison Creek public access road, which provides access to hunting and fishing areas; and facilities for canoe or float trips on the Yukon, Gulkana, Delta, Chatanika, and Fortymile Rivers and Birch Creek.

The public-domain lands administered by the Bureau are open to hunting and fishing under appropriate state rules and regulations. Many other recreation activities also take place on these lands.

Bureau of Commercial Fisheries

The Pribilof Islands in the Bering Sea are administered by the Bureau of Commercial Fisheries as a fur-seal reservation. The islands consist of St. Paul, St. George, Otter, Walrus, and Sea Lion Rock. Two of the islands, St. Paul and St. George, are 28,007 acres and 22,135 acres in size respectively. The other three islands have a total area of only 169 acres.

There is a Native village on each of the two larger islands. Many of the Natives are employed in the annual summer harvest of the fur and seal herd, which averages 94,600 pelts.

There is a landing strip on St. Paul Island which is serviced weekly by a commercial airlines flight. A few visitors come out to watch the fur-seal harvest each year. In addition, because the islands are accessible by a regular scheduled flight, the recreation use for bird watching and wildlife observation is steadily increasing.

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Department of Defense

The departments of the Army, Air Force, and Navy all provide outdoor-recreation facilities for use of military personnel stationed in Alaska. Although normally limited to use by military personnel, some of the facilities are available to civilians as well.

The Army's Fort Richardson and the Elmendorf Air Force Base, both located near Anchorage, have facilities for competitive sports, such as tennis and football, and also provide areas for hunting, fishing, horseback riding, golf, and skiing. The United States Naval Air Station at Kodiak has facilities for boating, fishing, hunting, camping, hiking, ice skating, and skiing.

State Recreation Areas, Facilities and Use

Because Alaska has been a state for only nine years, many of its programs relating to outdoor recreation are still evolving. In its Public Outdoor Recreation Plan, prepared by the Branch of Parks and Recreation, Division of Lands, Department of Natural Resources, the following observation relating to the importance of outdoor recreation to the state's economy is made:

> Tourism and outdoor recreation are among the most promising potentials for immediate increase in Alaska's economic activity. The State has initiated various programs to promote the growth of this industry. A Division of Tourism, among other functions, conducts a program of promotional advertising throughout the United States and Canada. To encourage tourism the Department of Natural Resources builds and maintains highway campgrounds and picnic areas which are the nucleus of a proposed State Park System. The Department of Fish and Game, with the Division of Lands, is classifying recreational fishing areas and selecting sites to assure public access to existing and potential fishing areas. All departments are cooperating in preparation of a statewide plan for the development of Alaska's recreation resources.

Branch of Parks and Recreation

Alaska's present State Park System has its beginning in the 45 campgrounds transferred to the State by the Bureau of Land Management in 1959. By 1966, the latest year for which figures were available, there were 63 areas with 614 individual units. Various types of areas make up the system, such as campgrounds, historic sites, recreation areas, scenic waysides, and picnic waysides. All of the areas are either adjacent to the State Highway System or close to it. Current recreation visitation figures were not available, but the yearly increase in use is known to be significant.

Department of Fish and Game

The Alaska Department of Fish and Game is responsible primarily for the regulation and management of the state's wildlife and fisheries resource. The annual value of the harvest of these resources is estimated to be 150 million dollars.

There are nearly fifty species of animals which may be hunted in Alaska. Upland bird hunting is limited to grouse and ptarmigan, but there are 33 species of waterfowl including two, the eider duck and the Emperor goose, which are unique to Alaska.

The Department estimates that there are more than nine million surface acres of freshwater lakes in the state and over 25,000 square miles of coastal saltwaters which are available for sport fishing. Nearly thirty different kinds of fish and shellfish provide a great variety of opportunity for fishermen.

Most of the fishing and hunting in Alaska takes place on public lands under the administration of a federal agency or a state agency other than the Department of Fish and Game. The Department held title to only a little more than 9,000 acres in 1966. However, the Department of Fish and Game cooperates with other agencies, such as the State Division of Lands, in providing public access sites and waterfowl game management areas.

Local Recreation Areas

None of the boroughs in Alaska have park and recreation departments. Anchorage is the only city in the state which has a full-time recreation department. The city is developing a comprehensive recreation plan which will provide for the improvement and expansion of the present city park system to include facilities in the surrounding areas.

Private Precreation Facilities

The role of the private sector in Alaska's outdoor recreation industry is becoming increasingly important. The results of a recent study of private outdoor recreation opportunities in the state was described in the Branch of Parks and Recreation's Outdoor Recreation Plan as follows:

> There are two basic types of facilities being provided by private endeavor in Alaska. One group includes hotels, motels, restaurants, service stations, souvenir shops, private camp sites, picnicking areas, boat access, ski areas, boating and bus tours, and other recreational activities. The other group includes the type of

transportation visitors use to reach and travel about the inaccessible parts of Alaska. These groups include airlines, cruise ships, railroads, and guide services. Guide services in Alaska play an important role in serving the public's needs in all phases of outdoor recreation from shooting a 1,600 pound polar bear on the ice floes in the Bering Sea to sightseeing and taking photographs of the Alaskan landscape.

FUTURE POTENTIALS FOR DEVELOPMENT

Alaska possesses a raw-wildlife resource unique to the United States. Alaska's unusual attractions of open space, frontier atmosphere, wildlife, history and culture could well make it the recreation center of America with increasing visitation from foreign nations.

Once considered remote, jet-air expansion and improved ferry and shipping service combined with a more affluent society bring Alaska within easier reach of larger population centers. Transportation and recreation studies show a constantly increasing influx of tourists and immigrants to Alaska.

The qualities of Alaska that attract people are reduced by degrees as more people visit each year, crowd present campgrounds, overflow into gravel pits or roadside turn-offs and stand elbow to elbow on favorite fishing streams. Present tourist and recreational facilities are wholly inadequate to support present demand, much less future requirements.

Expansion and improved maintenance of existing facilities is a paramount need if recreational demand is to be met but not the answer in itself. Even though Alaska is large, use, in recreational terms, is restricted by access. The present highway system limits travel plans, acting like a funnel, and causing egress and ingress to become burdensome. Intensive use of accessible areas inundates the resource quality and eventually decreases the desire of residents to participate in recreation and tourists to visit Alaska.

Recreational attractions, both remote and already accessible, have been identified by state and federal agencies. These areas are considered to be the initial high-quality possibilities to receive both planning and development in the near future. Developments in these areas, with access, could facilitate a coordinated approach to recreation management in the state and provide the opportunity to meet present and future recreational demands.

Potential Development Areas

Southeastern Region

The Southeast region is a complex of forested coastal mountains separated from hundreds of islands by navigable channels of clear blue waters. The aesthetics of the area on a clear day are unsurpassed, a vacationist's paradise, where bear, seal, waterfowl, deer and fish appear limitless. Glaciers, inhabited by mountain goats, feed directly into fiords or open waters, scattering oddly shaped icebergs throughout the inland passages. The future recreation potential of the area is impressive.

Accessibility is improving through the recently expanded ferry system and airline routes and Canadian cruise ships.

Russel Fiord is a proposed scenic area located near Yakutat containing 100,000 acres. Two glaciers feed directly into the saltwater of the deep fiord. The proposed Yakutat road system could provide vehicle access to this area in addition to existing boat and air travel.

Plans for a Juneau recreation complex include development of a winter sports area, the Juneau Ice Field, hiking trails, areas surrounding the U. S. Forest Service's Mendenhall Visitor Center, and campgrounds to accommodate Marine Highway tourists. The potential of this area is great. Development opportunities exist from sea level to the unique Juneau Ice Cap. Jet planes bring this area to within three hours of Seattle.

The Admiralty Lakes Recreation Area contains 110,000 acres. Initial planning is directed toward accommodating both developed-type recreation along proposed roads and "back country" opportunities in the remaining area. This area contains ten lakes in excess of 100 acres each, making it attractive to fishermen, campers and canoeists.

At Sitka Recreation Complex development is planned by the U. S. Forest Service to contain campgrounds, boating facilities, hiking, and interpretive trails. This area has recreation appeal due to its location on the open ocean and to the bays and sounds along Baranof and Chichagof Islands.

A second possibility is the hill identified today as the West Russian Cemetery. Only a few Russian graves remain here, but it might be feasible to reconstruct the Old Blockhouses, the principal existing feature. There is also the possibility of restoring the village stockade wall, the Kolosh (Indian) Church, and the trading post.

Working closely with the State of Alaska, the National Park Service would like to explore the possibilities for preservation and restoration of these and other similar historic sites in Sitka, with the objective of possibly adding them to the existing Sitka National Monument.

At Sitka Recreation Complex development is planned to contain campgrounds, boating facilities, hiking, and interpretive trails. This area has recreation appeal due to its location on the open ocean and to the bays and sounds along Baranof and Chichagof Islands.

Eventually many of the outlying villages and towns could be directly connected to this highway making them important tourist and recreation centers. Recreation developments may be planned at key areas along this highway route.

Considerable recreation demand and development is expected throughout the waterways system. Anchor bouys and docking facilities are being proposed for construction in cooperation with the state at strategic locations throughout the system to accommodate ever-increasing use by resident and non-resident small boat travelers. Access trails, campgrounds, resorts and marinas may all be a part of the recreational development of this area.

Skagway is located at the head of the Yaiya Inlet on the Lynn Canal in southeastern Alaska--terminus of the famous "Inland Passage." Founded in 1897, Skagway flourished as a result of the discovery of gold in the Upper Yukon Valley and Klondike. The town is on the direct route into the gold-bearing region and was a terminus for the White Pass and Yukon Route Railway.

About 100 buildings still stand which provide the finest existing example of an Alaskan mining frontier town. White Pass, about 45 miles long, lies northeast of Skagway and is still traversed by the narrow-gauge railroad. This area has been declared eligible for National Historic Landmark status.

Cook Inlet-Copper River Region

The Cook Inlet and Copper River regions combine to form a main artery in road-oriented recreation opportunities. Present use is extremely heavy along the limited highway routes while millions of acres of inaccessible and virgin lands lie between the roads.

The area serves the populations of Anchorage, the Kenai Peninsula, Matanuska Borough, smaller communities along the road system and the many tourists who drive the Alcan Highway each year to see Alaska. Hunters, fishermen and tourists arriving by air use Anchorage and nearby communities as a base for their expeditions.

The recreation opportunities are many and varied with opportunities ranging from sea level fishing and boating to high elevation skiing. Canoeing, boating, hiking, sightseeing and dog-sledding are offered seasonally. A unique feature is the opportunity to travel from the metropolitan city of Anchorage to a wilderness camp in several minutes by air.

The individual recreation complexes next discussed have received planning effort and minor, inadequate construction.

The three recreation complexes, Tangle Lakes, Lake Louise and Monahan Flats are designed to serve the Anchorage-Matanuska Valley residents and the many tourists using the Glenn and Denali highways enroute to Fairbanks and Mount McKinley Park. Internally, these complexes connect by rivers, lakes and occasional overland portages. With development, the areas could provide extensive canoeing, boating, fishing, hunting, winter sport and wilderness opportunities for a large population.

The Wrangell Mountains, adjacent to the Canadian border, have all the qualities of a wilderness complex. With development of the proposed Chitina to Koidern, Yukon Territory highway intertie, this area could become one of Alaska's most aesthetic and interesting recreational areas. A National Scenic Parkway between Copper River and Chitina Valley is under discussion and preliminary planning. Lakes, streams, winter sports, wilderness vistas, horseback riding and hunting in this area are already common. The Dall sheep, a prized trophy for the camera enthusiast or hunter, is common in the Wrangell Mountains. Early history of Alaska can be noted in the 1902 Valdez-to-Eagle trail. The first communication line to the interior and the old Kennicott copper mine, where pure copper nuggets, weighing tons, were picked from the surface of the ground, are features of this area. The remnants of the mining towns offer possible attractions for road travelers.

A Kenai National Recreation Area is being discussed for possible national recreation classification of Chugach National Forest lands encompassing about 1,300,000 acres. The area would be managed primarily for recreation purposes. Although some areas would remain remote, others would be made accessible by a system of scenic roads. Additional campgrounds, trails for winter and summer use, winter sports sites, scenic overlooks and additional interpretive services are planned within the National Forest to be a part of the eventual development of the area, regardless of administrative status.

One of the most important and enjoyable recreation areas to visit is the canoe country of the Kenai National Moose Range. Comparatively small yet productive lakes are interconnected by portages and waterways affording an opportunity for many miles of excellent canoeing only a few hours drive from Anchorage.

Bering Strait and Koyukuk-Lower Yukon Regions

Several land areas offer attractive recreation possibilities in the Bering Strait and Koyukuk-Lower Yukon regions.

The Salmon Lake Recreation Complex is the most important freshwater lake on the Seward Peninsula from a recreation and salmon spawning standpoint. A road from Nome provides access to the lake for residents and tourists. Fishing, gold panning and tundra scenery are the main attractions of the complex that also provides forage for many reindeer.

The south slope of the western Brooks Range offers several recreation development potentials, particularly in the Endicott Mountains and the area delineated by the Alatna and Kobuk Rivers. Canyons are deep, torrents are numerous, ridges are knife-sharp, and the peaks rise to elevations of 8,000 to 9,000 feet. Dramatic vertical drops between mountain and valley floor and the exposure of jagged bare granite peaks and their isolated cirque lakes adds to the appeal of this area.

This is boundary area between boreal forest and arctic tundra. Treeline is digitated on these slopes. Some of the oldest living Alaska spruce are present in this area. Transition from muskeg to bare rock can take place over distances of miles or within a few hundred feet in this varied topography. It is characterized by a wide variety of habitats. Within its clear lakes there is fine fishing for grayling and lake trout. Thirty-seven species of mammals are found here. Among these are black and grizzly bear, caribou, moose and Dall sheep. More than 150 species of birds have been recorded. Ecologically, the area is extremely interesting. The mountains manifest a wide variety of geological events and processes and typify the melding of arctic tundra and boreal forest and their associated plant and animal species.

Private individuals, organizations, universities and federal agencies have made several studies and explorations in this area for natural resource and recreation values with intentions of identifying and developing plans for both wilderness preservation and sound resource development and management.

Recreational possibilities and potential offer the opportunity for economic development and preservation of this natural resource. Approximately twenty lakes will accommodate landings of small float planes. One airline already owns an area on Selby-Narvak Lake. This and other potential areas could be developed recreationally and add to Alaska's base economy. Walker Lake has been considered as having national significance as an example of northern lake beauty. Most lakes are bordered by high well-drained forested lands which are ideally suited for compatible recreation site facilities.

An additional unique opportunity is available in this region for tourist-recreation development associated with Eskimo culture and marine mammal sport harvest.

Tanana and Upper Yukon-Porcupine Regions

Recreational and historical attractions related to the discovery of gold and the subsequent rush are common in these regions.

In addition, opportunity for recreational complex development exists in the White Mountains, Fortymile and Yukon River areas. Fairbanks, Alaska's interior community of 55,000 people together with populations of adjacent towns, and increasing tourist traffic are all providing demand for such opportunity. Similarly, the economy of the Fairbanks area could be strengthened by such development.

Access by road to key points in the region is partially available, but development of opportunities to date has been minimal.

Arctic Region

Despite exploration for minerals and fossil fuels, very little is known about the recreational opportunities of this region of arctic desert at the present time. Access is exclusively by aircraft and even then limited to lakes and brush strips with the only major field being at Point Barrow.

A recreational complex in the Anaktuvuk Pass region, similar to the Walker Lake-Alatna area, is a possibility dependent upon transportation development. Road or railroad development for support to oil and mineral extraction could aid access.

Several sites within the Arctic National Wildlife Range offer potential,and the vast caribou herds of the region could also support sport as well as subsistence harvest.

The development of recreational opportunity associated with Eskimo culture and marine mammal harvest offers economic as well as aesthetic values.

Gulf of Alaska Region

New recreational potential in this region includes developments associated with the Columbia Glacier and Copper River delta waterfowl management area.

At tidewater in Prince William Sound near Valdez the Columbia Glacier offers tremendous scenic attraction. The area is close to the present travel routes of the state ferry between Whittier, Seward and Valdez.

The Copper River delta waterfowl management area is a major recreational attraction for photography and waterfowl hunting in this famed waterfowl nesting and resting area.

The Gulf of Alaska region is tied to the Southeast region by ferry and air transport and to the Copper River region by road from Valdez. Road travelers may enjoy the history of the Valdez-to-Eagle trail, first communication line to the interior, and the aesthetic quality of the pass into the interior.

Bristol Bay and Kodiak Regions

In addition to possibilities and plans for the expansion of recreational opportunities on the Kodiak National Wildlife Refuge and the Katmai National Monument, two significant development potentials exist. These are the Iliamna Lake recreational complex and the Wood River-Tikchik Lake region. Iliamna Lake, one of the most important red salmon spawning beds in the world, is also unequalled rainbow trout fishing. Dall sheep abound in the mountains to the north in Lake Clark Pass which is one of the most spectacular glacier-carved passes in Alaska.

Proposed road and ferry extensions could provide increased tourist and residential access. This area, presently classified for recreational use by the Bureau of Land Management, could receive heavy use in the near future.

The Wood River-Tikchik Lakes with their connecting rivers combine to provide the most scenic recreation waterway system in Alaska. The lakes and rivers are clear, large and beautiful. Lake trout, Arctic char, rainbows, greyling and salmon are the most promising fish in the area for a freshwater fishery and for sport fishing. The lands of the area have been selected and classified for recreation by the State of Alaska. The region has also long been studied and suggested as a potential major national or state park. Joint federal-state management of this area is a possibility.

Other Potentials - National Landmarks

The Registry of National Landmarks is a program administered by the United States Department of the Interior, under the authority of the Historic Sites Act of 1935. The program was undertaken to establish an inventory of nationally significant historical and natural properties of America and to encourage their continued preservation. The Registered National Landmarks program is voluntary. Landmark designation does not change ownership or responsibility for the property; it merely pledges owners to maintain the integrity of particular sites. Those already registered in Alaska include:

American Flag Raising Site--Sitka, Alaska

At this site on October 18, 1867, the Russian flag was lowered and the American flag raised to symbolize the transfer of sovereignty over the Alaskan territory from Russia to the United States.

Anvil Creek Gold Discovery Site--Nome, Alaska

The first large gold placer strike in Alaska was made at the Anvil Creek Gold Discovery Site on September 20, 1898. This discovery resulted in Alaska's greatest gold rush.

Birnirk--Barrow, Alaska

The series of mounds at this site provided the material by which archeologists have been able to describe the development of Eskimo culture in this northernmost part of the United States from around 600 AD to the present day.

Chaluka--Umnak Island, Alaska

The Chaluka site is a village mound holding remains of all culture periods thus far identified in the Aleutian Islands.

Erskine House--Kodiak, Alaska

The Erskine House is apparently the oldest Russian structure still standing in the United States. It was traditionally built in 1792-1793 under the leadership of Alexander Baranov.

Fur Seal Rookeries--St. Paul Island, Alaska

The Pribilof Islands have been the greatest single source of furs in the world since 1787, and its rookeries still exhibit in living form the fur resources that have lured Russian, British, French, Spanish, and American fur hunters to Alaska from the 18th century down to the present.

Gambell Sites--St. Lawrence Island, Alaska

The Gambell Sites were the first in the greater Bering Strait region to be scientifically investigated and reported. This investigation first provided data on the sequence of cultures in St. Lawrence Island; and through this work, it was then possible to reduce the accumulated information on Eskimo prehistory to chronological order.

Ipiutak--Point Hope, Alaska

Ipiutak is a large and spectacular Paleo-Eskimo site with house remains and elaborate burials.

Iyatayet--Cape Denbigh, Alaska

The Iyatayet site, between 6,000 and 8,000 years old, is the earliest site associated with Early Man yet found in Alaska.

Old Sitka Site--near Sitka, Alaska

The Old Sitka and Redoubt St. Michael Site, 1799-1802, was the first European settlement in the Alexander Archipelago. It was destroyed by the Tlingit Indians in June, 1802.

Palugvik--Hawkins Island, Alaska

Palugvik provided evidence that the Eskimo-speaking inhabitants of heavily timbered Pacific bays and islands of the Prince William Sound Region were not newcomers, but part of a long-established population and culture.

Russian Mission Orphanage--Sitka, Alaska

Erected in 1842, the Russian Mission Orphanage served as the residence, office, mission school, and private chapel of Ivan Veniaminov, the Russian religious leader and first Bishop of Alaska.

St. Michael's Cathedral (Site)--Sitka, Alaska

Until destroyed by fire on January 2, 1966, St. Michael's Cathedral was regarded as the finest example of Russian architecture in the United States. The Cathedral is currently being reconstruced.

Skagway and White Pass (Historic District)--Skagway, Alaska

Skagway, founded in 1897, flourished as a result of the discovery of gold in the Upper Yukon Valley and Klondike region of Canada.

Wales Complex--Cape Prince of Wales, Alaska

Strategically located on the aboriginal Eskimo trade routes, the Wales sites have produced materials dating from around 600 AD to the present.

Yukon Island (Main Site)--Yukon Island, Alaska

The Yukon Island Main Site is the oldest and most continuously occupied of the known Cook Inlet aboriginal sites, having been utilized as a village site for about 2,700 years.

Lake George

In the Chugach Mountains about 44 miles northeast of Anchorage, Lake George has been recommended by the Secretary of the Interior for addition to the National Registry of National Landmarks.

Other Potentials - Natural Landmarks

Recognizing the tremendous inherent natural values in Alaska, the Department of the Interior also has an extensive program for the evaluation of outstanding natural areas for possible eligibility as Registered Natural Landmarks. Areas recommended for approval in this category include:

Aniakchak Crater, Alaska

Administered by the Bureau of Land Management, the crater of Aniakchak contains approximately 20,000 acres and is one of the largest known in the world. It has hurled 15.4 cubic miles of debris out of its core, scattering it for 20 miles on the surrounding countryside.

Bogoslof Island, Alaska

The 160-acre island, located in the Bering Sea about 25 air miles north of Umnak Island in the Aleutian Archipelago, is administered by the Bureau of Sport Fisheries and Wildlife as a national wildlife refuge. Bogoslof Island is an historic geologic feature. At least six island masses have risen here in 130 years. Remnants of the last three eruptions form the present island. A large variety of sea birds nest here.

Mount Veniaminof, Alaska

The more than 800,000-acre area of Mount Veniaminof is administered by the Bureau of Land Management. It is located in the Aleutian Chain, about 20 air miles southeast of Port Moller on the Bering Sea and 20 miles northwest of Chignik on the North Pacific Ocean. Veniaminof crater contains a cupped ice field of 25 square miles, the most extensive crater-glacier in the nation. It is the only known glacier on the continent with an active volcanic vent in its center.

Shishaldin Volcano, Alaska

Shishaldin Crater is the highest of eleven known volcanoes on Unimak Island about 50 miles west of Cold Bay in the Aleutian Archipelago of Alaska. The actual cone and crater include about 63,000 acres. It is part of the Aleutian Islands National Wildlife Refuge administered by the Bureau of Sport Fisheries and Wildlife.

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Arrigetch Peaks, Alaska

The Arrigetch Peaks lie in the central Brooks Range of Alaska, approximately 250 miles northwest of Fairbanks. Interesting and important illustrations of tundra and boreal forest ecology are found in the area. Primary significance, however, is related to its examples of geological processes.

Brown Bear Refuge, Alaska

The Brown Bear Refuge is an area of approximately 160 square miles, including the mouth of the McNeil River and the major portion of its drainage. On the Alaska Peninsula about 200 miles southwest of Anchorage, the river opens into Kamishak Bay in the southern portion of Cook Inlet. The refuge is set aside by the state to provide permanent protection of the brown bear in a natural habitat.

Middleton Island, Alaska

Middleton Island, consisting of about five square miles, is located in the Gulf of Alaska about 155 miles southeast of Anchorage. The great Alaska earthquake of 1964 uplifted the island ten feet. There is wave-cut terrace evidence of this happening to Middleton at least five times in the past, providing a significant illustration of tectonic uplift as a result of earthquakes.

Unga Island, Alaska

Unga Island is the largest in the Shumagin Island group, just off the Alaska Peninsula about 500 miles southwest of Anchorage and about 70 miles east of Cold Bay. The exposures of petrified logs and stumps occur along the shores of the northern end of the island in an area of about 6,400 acres. It is administered by the Bureau of Land Management. The paleobotanical specimens so common on Unga Island occur as standing stumps and "rolled" logs, in which wood has been replaced by silica or carbonized. That a forest of such large trees could flourish on what almost certainly was an island perhaps one million years ago or more has meaning in terms of the passage of species between Asia and America.

Walker Lake, Alaska

Walker Lake lies on the south slope of the Brooks Range in northern Alaska nearly at the head of the Kobuk River and includes all of Walker Lake and its principal tributary, Kaluluktok Creek, a total area of about 283 square miles. This lake provides a striking example of the geological and biological relationships of a mountain lake at the northern limit of forest growth on the south slope of the Brooks Range.

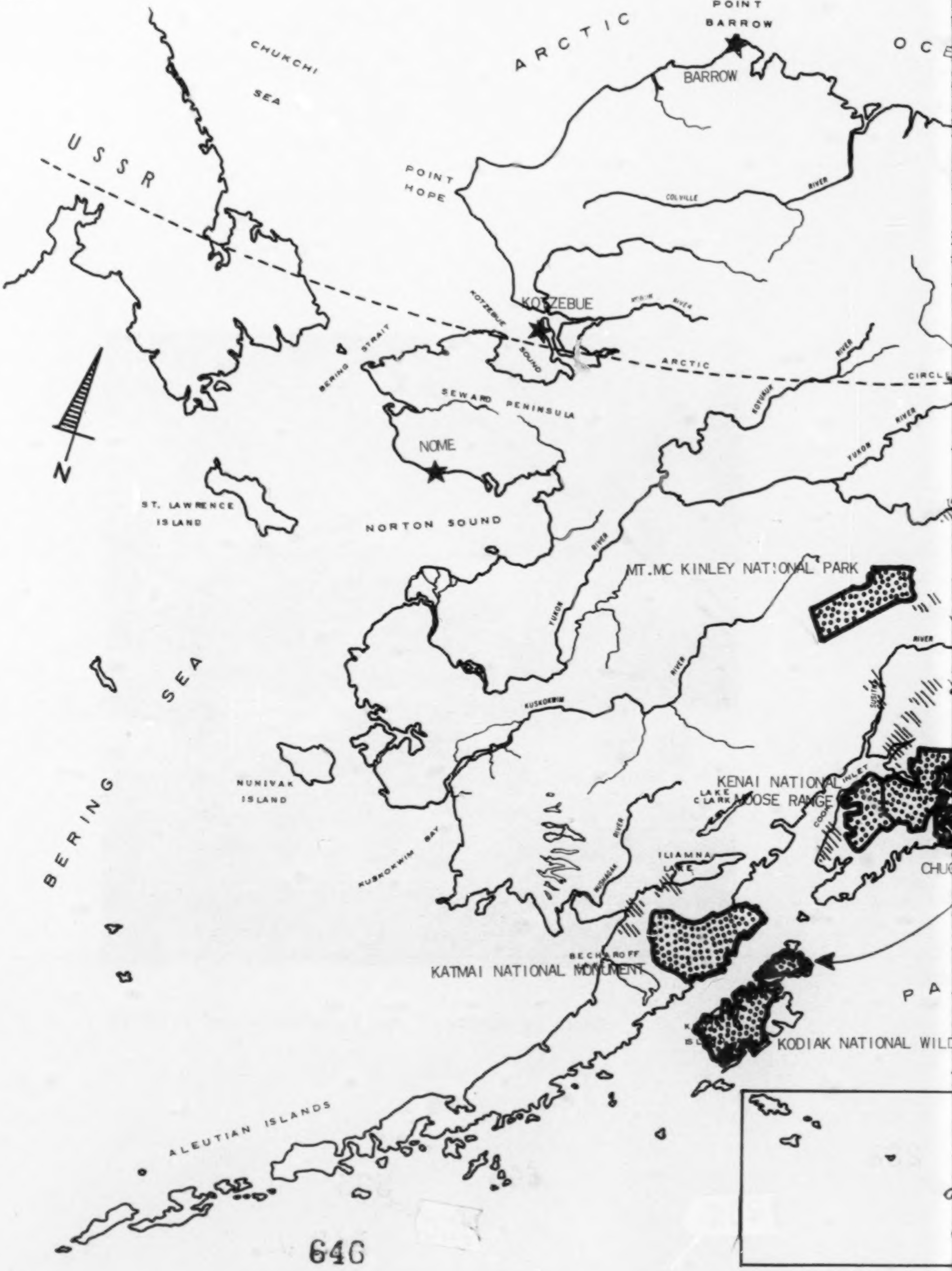
Walrus Islands, Alaska

The five islands making up the Walrus Islands State Game Sanctuary are in Bristol Bay about 375 miles southwest of Anchorage. The land area involved totaling about 9,187 acres is owned by the state and administered as a walrus sanctuary.

The following maps, Figures IV-62 to IV-63, show the location of existing and potential recreation areas in the state:

Photo by U. S. Forest Service

Photo by Bureau of Sport Fisheries and Wildlife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RIVER
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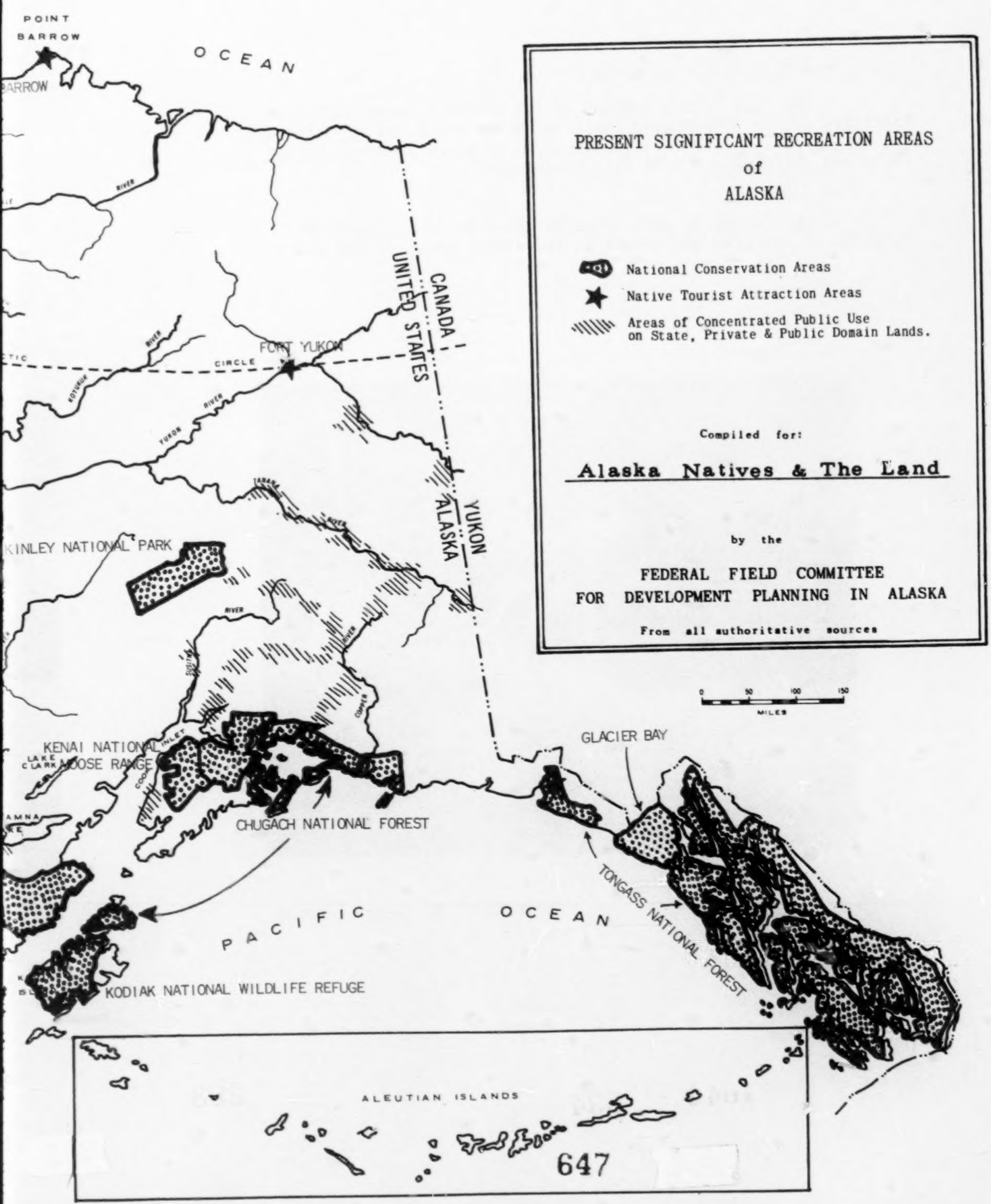
KODIAK NATIONAL WILD
ALEUTIAN ISLANDS

FIGURE IV · 62


PRESENT SIGNIFICANT RECREATION AREAS
of
ALASKA
National Conservation Areas
Native Tourist Attraction Areas
Areas of Concentrated Public Use on State, Private & Public Domain Lands.
Compiled for:
Alaska Natives & The Land
by the
FEDERAL FIELD COMMITTEE FOR DEVELOPMENT PLANNING IN ALASKA
From all authoritative sources
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MILES
POINT BARROW
OCEAN
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ALASKA
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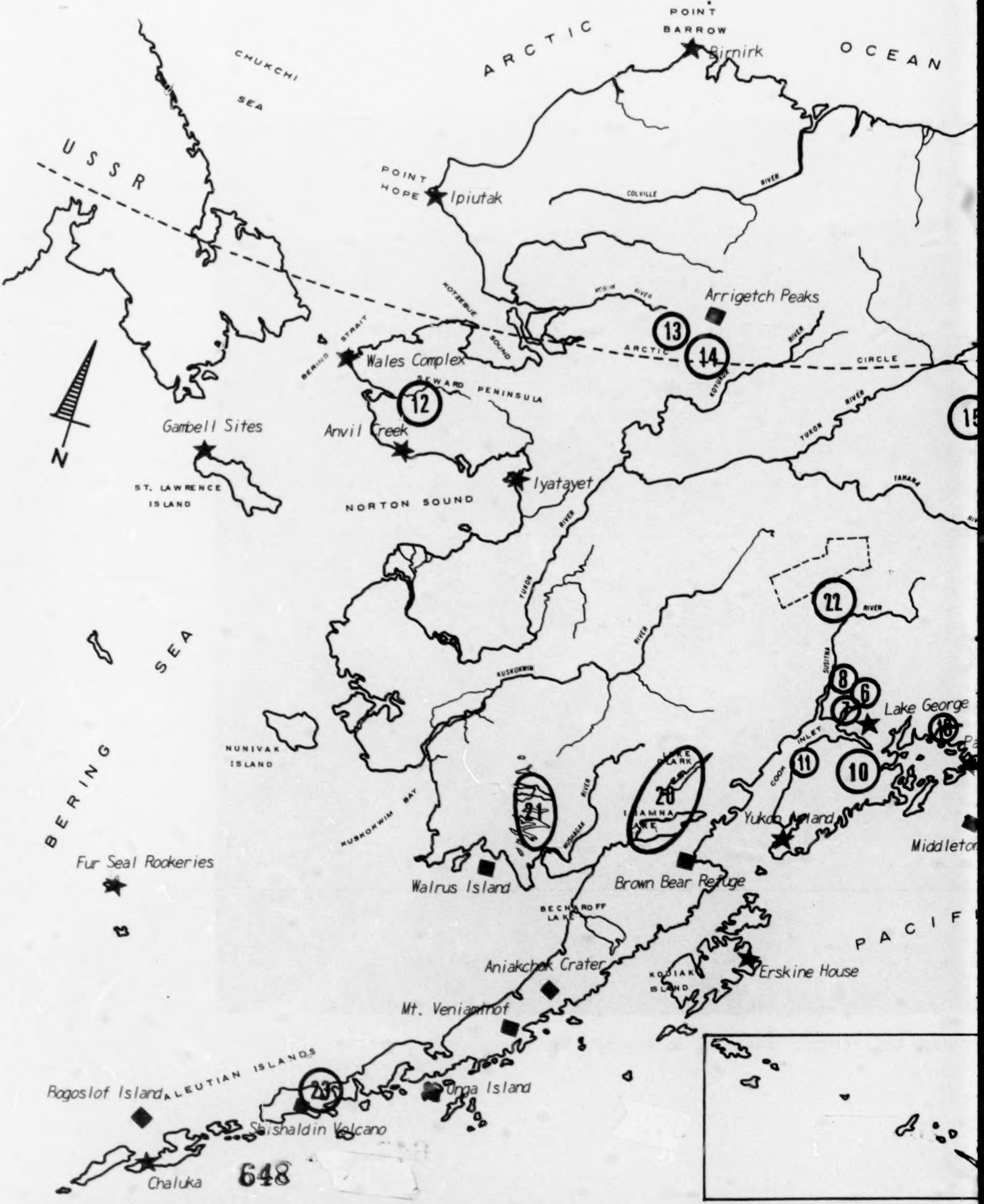
RIVER
SUSITNA
RIVER
COPPER
KENAI NATIONAL MOOSE RANGE
LAKE CLARK
COOK INLET
AMNA
KE
CHUGACH NATIONAL FOREST
GLACIER BAY
TONGASS NATIONAL FOREST
PACIFIC
OCEAN
KODIAK NATIONAL WILDLIFE REFUGE
ALEUTIAN ISLANDS

FIGURE IV · 62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Ipiutak
COLVILLE RIVER
KOTZEBUE SOUND
KOBUK RIVER
Arrigetch Peaks
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ARCTIC CIRCLE
KOYUKUK RIVER
BERING STRAIT
Wales Complex
SEWARD PENINSULA
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Gambell Sites
Anvil Creek
ST. LAWRENCE ISLAND
Iyatayet
NORTON SOUND
YUKON RIVER
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Lake George
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COOK INLET
BERING SEA
KUSKOKWIM
KUSKOKWIM BAY
NUNIVAK ISLAND
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NUSHAGAK RIVER
LAKE CLARK
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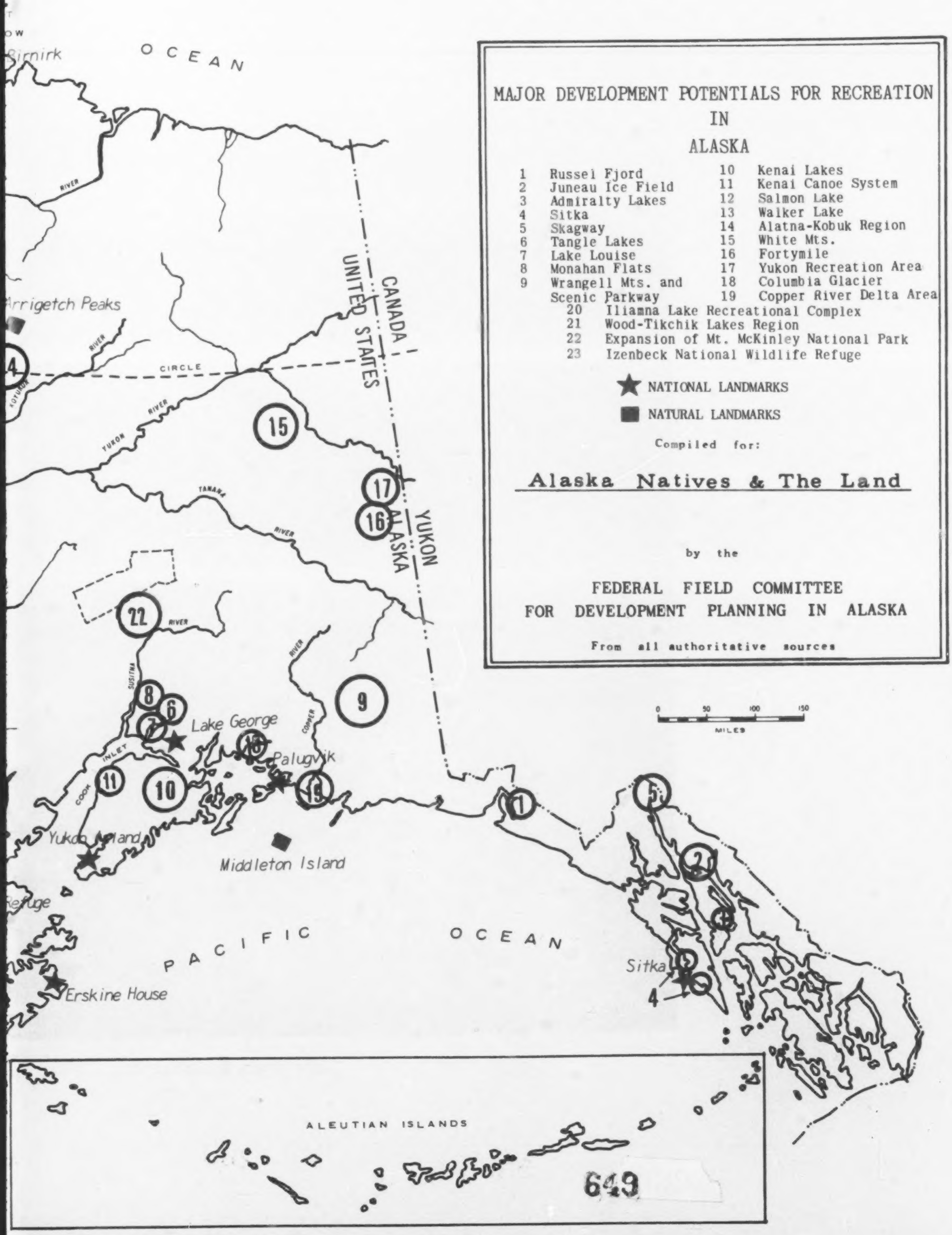
ILIAMNA LAKE
Yukon Island
Middleton
Fur Seal Rookeries
Walrus Island
Brown Bear Refuge
BECHAROFF LAKE
PACIF
Aniakchak Crater
KODIAK ISLAND
Erskine House
Mt. Veniaminof
ALEUTIAN ISLANDS
Bogoslof Island
23
Unga Island
Shishaldin Volcano
Chaluka

FIGURE IV - 63



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Palugvik
COOK INLET
Yukon Island
Middleton Island
Refuge
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MAJOR DEVELOPMENT POTENTIALS FOR RECREATION IN ALASKA

1	Russel Fjord
2	Juneau Ice Field
3	Admiralty Lakes
4	Sitka
5	Skagway
6	Tangle Lakes
7	Lake Louise
8	Monahan Flats
9	Wrangell Mts. and Scenic Parkway
10	Kenai Lakes
11	Kenai Canoe System
12	Salmon Lake
13	Walker Lake
14	Alatna-Kobuk Region
15	White Mts.
16	Fortymile
17	Yukon Recreation Area
18	Columbia Glacier
19	Copper River Delta Area
20	Iliamna Lake Recreational Complex
21	Wood-Tikchik Lakes Region
22	Expansion of Mt. McKinley National Park
23	Izenbeck National Wildlife Refuge

★ NATIONAL LANDMARKS

■ NATURAL LANDMARKS

Compiled for:

Alaska Natives & The Land

by the

FEDERAL FIELD COMMITTEE
FOR DEVELOPMENT PLANNING IN ALASKA

From all authoritative sources

FIGURE IV - 63

SUBSURFACE RESOURCES

LOCATABLE MINERAL RESOURCES

Relation to Native Protests and Claims

More than half of Alaska's total metallic production, valued at over 1.3 billion dollars, has come from areas now covered by Native protest claims, and an important part of the state's known mineral resources also are in claim areas. Gold and copper make up the major part of Alaska's metal production and known resources.

Fairbanks, Alaska's primary gold-producing area, is outside the claim area, as are the important Fortymile and Seventymile districts. However, the Seward Peninsula and Iditarod districts, ranked second and third in production, fall within the claim boundaries, which thus encompass areas responsible for something over half the state's total placer gold production.

The formerly productive mines of Kennecott and Prince William Sound and the potentially significant resources at Bornite and Orange Hill-Bond Creek are located in areas of Native protest claims. Of the major copper-producing areas, only that on Prince of Wales Island is outside the Native claims boundary.

At present a realistic value cannot be put on the future metallic resources of lands under Native protests or claims. It can only be pointed out that geologic provinces known to be favorable for mineral occurrence cut across Alaska, and it can be inferred that important resources will be discovered in some of these, both in and out of the areas of Native contention. Thus far only the Arctic coastal region and north slope of the Brooks Range, both included under Native protest claims, appear generally unfavorable for the occurrence of metallic mineral resources.

History of Mineral Resource Development

Metallic mineral resources, particularly gold and copper, were mainstays of the Alaskan economy from about 1880 until shortly after World War II. After that, rising operating costs and depletion of known deposits adversely affected Alaska's metal mining industry, until in 1967 the production of all metals was valued at less than $7,000,000, a figure approximately only 1/7th of the maximum $48,000,000 reached in 1916. Offsetting the dollar loss to the economy has been the steady expansion of the sand and gravel industry and the production of leasable minerals, particularly petroleum. Preliminary estimates suggest oil and gas production in 1967 was valued at about $88,000,000, a figure approaching twice the value of any single year's total metallic production.

Dollars from the strongly localized petroleum and natural gas industry do not, however, directly affect many Alaska communities formerly stabilized by mining, so dollar values are not totally equatable with overall prosperity.

The fact that Alaska has resources of strategic metals and increased geologic and exploration activity suggests that the low point in Alaskan metals production may have been reached and a gradual expansion is in order. Economic factors pointing to this are continued high prices for strategic metals such as mercury, tin, and nickel, the two price system for gold, and Japanese interest in raw materials from the Pacific coastal region. Of special interest to this report is the fact that because of the wide distribution of metals in the state, many occurrences and some significant resources fall in the areas of Native protest.

Mineral Resources as Related to Geologic Framework

Inspection of the mineral commodity maps included in this report shows that metallic minerals are very widely distributed in Alaska, being generally absent only from the crest and north slope of the Brooks Range, the Arctic Coastal plain, and the outer Aleutian Islands. Elsewhere, the lack of known occurrences probably reflects burial beneath surficial deposits or inadequate examination of surface exposures, especially in remote regions. The data on the regional subsurface resource maps (Figures IV - 64 to IV - 78) at the end of this chapter showing the localities that have produced placer gold, are particularly significant. Small amounts of gold accompany many different types of metallic deposits, and although these deposits are not necessarily minable in their primary concentrations, the winnowing effect of running water and erosion has selectively sorted the gold and produced placer deposits. Such deposits did not need sophisticated tools for discovery, only a pick, shovel, and gold pan. Because of this wide distribution and ease of discovery, the maps showing distribution of placer gold deposits serve as a good general guide to the ubiquity of metallization in Alaska. The main region where the placer gold distribution does not adequately reflect metal deposits is southeastern Alaska, where the sparsity of placers reflects the steep topography and rapidly moving rivers rather than sparsity of metal deposits.

The subsurface resource maps show the main metallic commodities of the state; they are based on many published commodity maps, particulary those published by the U. S. Geological Survey.

Superposition of data from these maps on a geologic map of the state shows clearly that most clusters of mineral occurrences conform to a definite geologic province or belt. This fact provides a means for predicting, in general, where new ore discoveries will be made. For example, the basic similarity of geology along the southern Brooks Range extending southward into the eastern Seward Peninsula, suggests that massive copper sulphide deposits similar to those partly developed at Ruby Creek may occur at other places in this province. Because the geology of Alaska is still incompletely known and because many regions are covered by surficial deposits or are relatively inaccessible to prospectors, it is clear that many ore deposits are yet to be found; hence, an appraisal of the mineral potential must be based on knowledge of the geologic framework and of the mineral deposits already known.

Metallic Commodities

Antimony

Antimony is one of the oldest metals in continuous use by man. In metallic form it is used in alloys to increase hardness, minimize shrinkage, inhibit corrosion and lower the melting point; very pure antimony metal is used in semiconductor and thermoelectric devices. In its nonmetallic form antimony has a wide range of industrial applications, including paints, vulcanizing agents, ultraviolet light textile filters and fire resistant organic solvents.

Production

Total production of antimony ore from Alaska is estimated to have been no more than 6,400 short tons. Most of this has come from the Stampede mine in the Kantishna district, about 100 miles southwest of Fairbanks, and from deposits near Fairbanks.

Prior to the development of the Stampede mine in 1936, Alaskan production was minor except during the period of high wartime prices from 1915 to 1918. Between 1936 and 1951 production from that mine was about 3,300 tons of ore containing approximately 1,700 tons of metallic antimony. Since 1951 shipments have been sporadic and probably have totalled less than 100 tons. No shipments were made from the Stampede mine in 1966, but 14 short tons of concentrates containing 55 percent antimony were added to 45 tons of ore already stockpiled.

Production from the Fairbanks district has been approximately 3,000 tons,2,500 tons of which was shipped prior to World War II when the price of the commodity was high. No data are avilable on the amount of antimony recovered from the Red Devil quicksilver mine near Sleetmute in southwestern Alaska, but it is believed to be comparatively minor.

Resources and potential

Stibnite, the principal ore mineral of antimony, is widespread in Alaska and occurs mainly in the form of small discontinuous lode deposits. At the Stampede mine the ore occurs in veins, lenses and stringers controlled by shear zones that cut schistose quartzite. One exceptional ore body was 26 feet thick. The low-grade mill ore contained 10 to 20 percent and the high-grade shipping ore more than 50 percent of antimony per ton. Other smaller deposits occur in the Kantishna district on Slate, Caribou and Slippery Creeks and scattered along the front of the Alaska Range.

At least 50 stibnite lode deposits are known in the Fairbanks district, but the principal ones are localized in the Pedro Dome and Ester Dome gold belts in an area that roughly extends between 10 miles west and 23 miles northeast of Fairbanks. Eighteen of these deposits have been productive, mainly from quartz veins in schist. Many of the veins contain jamesonite and other antimony-bearing sulfosalts, as well as gold, silver and base metals.

On the Seward Peninsula, stibnite is associated with gold, silver, and some base metals in quartz-calcite veins that cut schist east and north of Nome. About 1,500 pounds of ore reportedly was mined from the Peterson and Lamoreaux property, but was never shipped. Other small antimony deposits occur in the Goodpaster and Bonnifield districts of east-central Alaska, on the Kenai Peninsula and at Caamano Point about 16 miles northwest of Ketchikan.

In addition to being small and erratically distributed, most of Alaska's antimony deposits are inadequately explored or developed. Overall reliable resource estimates therefore are not possible. Known resources in the Fairbanks and Kantishna districts probably only amount to 100 tons or so of high-grade and perhaps 10,000 tons of low-grade or submarginal material. The resources of the Seward Peninsula are estimated to be a few thousand tons. Doubtless additional discoveries can be expected, especially in the less explored bedrock areas of the state, and new resources developed by further prospecting in the vicinity of known deposits. Byproduct recovery from Alaskan mercury deposits also can be anticipated. However, antimony has a specialized consumption pattern that does not conform to general mineral economic trends, but rather to the special demands of the storage battery, textile, plastics and rubber industries. The geologic and economic factors associated with domestic antimony deposits, especially those in Alaska, probably preclude successful competition with low-cost imports and discourage hope for significant increased domestic production, even under the incentive of an abnormally high price.

Beryllium

Beryllium, long famous for its ability to harden copper with steellike strength, now also has important applications in nuclear energy, high-speed flight, missiles, and space exploration.

Until about 1960, beryllium was a strategic element in short supply within the United States; essentially all of the 230 tons of metal used yearly was derived from imported beryl ores. In 1960, deposits of nonpegmatite beryllium were found in the Seward Peninsula, Alaska, and at Spor Mountain, Utah. Because of large proven reserves, captive market, and nearness to low-cost transportation, it is likely that beryllium from the Utah deposits will meet domestic requirements for many years, even if consumption rises drastically. At present, interest of industry in exploring for additional deposits and reserves of beryllium is practically nil; however, should large-scale new uses develop, such as use of beryllium-aluminum or beryllium-magnesium alloys in airframes, the Alaska deposits conceivably could become productive.

The large Alaska deposits near Lost River consist mainly of the beryllium mineral chrysoberyl (Al_2BeO_4) intergrown with diaspore, fluorite (CaF_2), tourmaline, white mica, and small amounts of euclase ($HBeAlSiO_5$), bertrandite ($H_2Be_4Si_2O_9$), todorokite (a manganese mineral), and hematite. Some veins contain sulfide minerals and cassiterite. All the deposits are of the replacement type in limestone, forming veins, pipes and stockworks. Resources amount to about 1,960,000 short tons of material containing between 0.15 and 0.54 percent beryllium, with an average of 50 percent fluorite. Additional large resources of lower grade are known. As the district is largely unexplored, chances are good for increasing reserves by physical exploration. Small amounts of phenacite (Be_2SiO_4) occur in pegmatites associated with a peralkaline stock at Bokan Mountain, Prince of Wales Island.

Because the Lost River deposits contain an average of about 50 percent fluorite, it is conceivable that a hydrometallurgical process involving production of saleable HF could be developed; even this possibility seems remote because of the distance from markets and source of sulfuric acid, which probably would be used in the process. Hence, we may conclude that Alaskan beryllium deposits are, for present at least, not suitable for competitive commercial development.

Chromite

Because of its special properties of imparting hardness, corrosion and oxidation resistance, and strength at elevated temperatures, chromium is essentially indispensable in a broad range of industrial applications. In addition, chromium chemicals are used in the manufacture of pigments, leather tanning, textile processing and electroplating, and chromite, the only ore of chromium, is a major refractory.

Total production of chromite from Alaska has only been about 30,000 tons, mainly under the stimulus of high wartime prices and all from deposits on the Kenai Peninsula. Approximately 3,000 tons of ore averaging about 45 percent Cr_2O_3 was mined in 1917-1918 from a single deposit at Claim Point. From 1942 to 1944 a total of 6,619 tons, averging about 42 percent Cr_2O_3, was produced from deposits on Red Mountain. The most recent production from 1954 to 1957 amounted to 21,435 tons of ore, all from the Red Mountain deposits. Most of this was of metallurgical grade (48 percent Cr_2O_3) with a Cr:Fe ratio of about 2.9:1.

Resources and potential

The only significant chromite deposits known in Alaska occur at the south end of the Kenai Peninsula at two localities: one is at Claim Point near Portlock; the other is at Red Mountain, 10 miles southeast of Seldovia. These deposits are localized in two ultramafic intrusive bodies and consist of chromitiferous layers that range in size from thin stringers to lenses that contain more than 50,000 tons.

At Claim Point most of the chromite occurs in a single layered and disseminated deposit that contains less than 30 percent Cr_2O_3. The deposit is at least 350 feet long and averages 60 feet in width. Thickness and grade become negligible 175 feet beneath the surface.

The 31 known Red Mountain deposits occur at altitudes between 1,200 and 2,800 feet. The main ore body is about 7 feet thick, 630 feet long, and extends at least 235 feet down the dip of 50°.

Other occurrences of chromite in ultramafic rocks are known in the Chugach Mountains near the head of Cook Inlet near Eklutna, about 7 miles southeast of Tonsona in the Copper River Basin, near Livengood in the Yukon River region, in southeastern Alaska on Baranof Island, and on the Cleveland Peninsula near Ketchikan.

The total estimated chromite resources of the Kenai Peninsula are about 420,000 long tons. Those at Claim Point are estimated at 268,000 tons of material that contains about 18 percent Cr_2O_3. At Red Mountain most of the remaining known resources, which total about 150,000 tons, contain between 11 and 49 percent Cr_2O_3, with a Cr:Fe ratio of 3:1. The chromite resource of the area near Tonsona does not exceed a few thousand tons, and a few hundred tons of shipping ore might be minable from the Red Bluff Bay deposit on Baranof Island.

Ultramafic rocks of the type that typically contain workable deposits of chromite are widely distributed throughout Alaska. In addition to the localities discussed above, areas of ultramafic rocks in the De Long Mountains of northwestern Alaska, near Platinum in southwestern Alaska, eastward from Fairbanks to the International Boundary, and in several areas of southeastern Alaska constitute geological environments favorable for the occurrence of chromite. Intensive prospecting in these regions might result in significant increases in estimates of Alaskan chromite resources.

Copper

Copper is one of the major industrial metals in modern civilization, and its utilization by man dates from prehistoric times. About half of it is used in diverse electrical applications; most of the rest is used in various alloys and in nearly every major industry. Significant properties of copper are its high electrical and thermal conductivities, good corrosion resistance, ductility, malleability, and high strength.

Production

Copper largely from the Kennecott mines, was important in Alaska's economy between 1911 and 1938. For many years the mines were one of the world's major copper producers, with a total production of about 1.2 billion pounds of copper and significant byproduct silver from copper sulfide lodes in limestone. Other Alaskan copper production was from southeastern Alaska and the Prince William Sound region. Southeastern Alaska production was mainly between 1906 and 1918 from contact-metamorphic deposits on Prince of Wales Island. It included about 23 million pounds of copper and byproduct gold, silver, and palladium. Prior to 1930 mines in the Prince William Sound region, chiefly the LaTouche and Ellamar, produced about 214 million pounds of copper with subsidiary byproduct precious metals. A little native copper was used by the Copper River Indians and some of the coastal tribes, who probably acquired it by bartering.

Since 1938 Alaskan copper production has been negligible. During the past few years a few hundred tons of copper ore has been mined from surficial workings at the Kennecott mines.

Resources and potential

The potential for increased copper production from Alaska is good, but it is unlikely that the state will regain its former prominent position among the world's copper producers. The largest known copper reserve in Alaska is in the Bornite (Ruby Creek) deposits where more than 100 million tons of ore containing 1.2 to 1.6 percent copper have been reported (Mining World, February 1962, p. 21, 39). The Orange Hill porphyry copper deposit near Nabesna has reserves estimated at 200 million tons of 0.4 percent copper and lesser amounts of molybdenum, gold, and silver. These reserves can be augmented by extrapolation to include that part of the mineralized stock beneath the altitude of the Nabesna River and small adjacent contact-metamorphic deposits. Other Alaska copper deposits are best considered as resources. Those in the Prince William Sound region are estimated to include 1.5 million tons that average slightly more than 1 percent copper and 5 million tons that average slightly less than 1 percent copper. Copper resources of the Kasaan Peninsula on Prince of Wales Island are estimated to be about 1.5 million tons with an average copper content of less than 2 percent.

Elsewhere in southeastern Alaska small resources are in deposits near Copper Mountain on Prince of Wales Island, at the Sumdum Prospect about 50 miles southeast of Juneau, and a few other prospects. Recently discovered copper deposits south of McLean Arm, near the southern tip of Prince of Wales Island, are being explored, but their potential cannot as yet be evaluated.

Inferred copper resources at the Kennecott mines and nearby prospects are small, but the possibility of discovering a deposit in the district similar to the bonanza Kennecott deposits cannot be precluded. The Kennecott Copper Corporation has been exploring an apparently large low-grade copper deposit near Bond Creek east of Nabesna, but no reports concerning this deposit have been published. The only data available indicate that the grade of the deposit is comparable to that at Orange Hill.

Some of the greenstone (altered lava) that underlies large tracts of east-central Alaska, including parts of the Wrangell Mountains and the Alaska Range, contains native copper and constitutes a potential resource. Although many of these deposits probably are large, they characteristically are too lean to encourage significant exploration. Other copper resources are scattered in parts of the central and southern Alaska Range and in southwestern Alaska. At present they cannot be evaluated adequately, but additional exploration may indicate that some of them are important. The association of copper with greenstone suggests that concentrations of copper may also occur near it in other rock units. A possible example is the copper deposit found in 1963 near Pass Creek in the Valdez Creek district, where copper minerals are in limestone adjacent to a thick series of somewhat cupriferous basalts.

Copper is a potentially valuable byproduct of nickel-copper deposits that are associated with mafic and ultramafic rocks, chiefly in southeastern Alaska. In particular the Brady Glacier prospect contains sufficient tonnage and grade to become a significant copper producer. By-product copper probably would also be recovered in the advent of mining some of the state's molybdenum deposits, such as those at the Nunatak (Muir Inlet) molybdenum prospect in Glacier Bay National Monument.

On a broader scale the future of Alaska copper is clouded by external competition. The porphyry copper deposits of the western United States with their vast low-grade reserves that are exploitable by low-cost methods, similar very large South American deposits that either are being mined or developed, and other large deposits in northern Michigan, Africa, and Europe, probably will continue to dominate the world copper market for many years.

Gold

Gold, more than any other factor, brought Alaska to the attention of the 19th and early 20th-century United States. The future, however, is uncertain, especially for operators producing only gold. The best chances for a marked increase in Alaskan gold production seem to be as a byproduct or from the discovery of large new deposits that can be mined by modern, less expensive techniques.

The dominant early-day use of the gold produced in the United States was monetary, and ultimately the gold production from the western United States, Canada, and Alaska, was responsible for much of the capital for post-Civil War industrial expansion. In Alaska it was partly responsible for the development of some of the coastal cities, and mainly responsible for the development of the interior region. At present, about three-quarters of the gold consumed in the United States goes into traditional uses such as jewelry and dentistry; the rest goes into industrial processes, many with space- and computer-age applications. It is significant that the United States now produces only about one-third of the gold it consumes. The spread between production and consumption increased from a deficit of about 25 percent in 1960 to a deficit of nearly 70 percent in 1967.

Production and resources

The total gold production from Alaska. through 1967, is slightly more than 30 million ounces, of which about 9 million have come from lode deposits and about 21 million from placer deposits. Alaska presently ranks fifth, after California, Colorado, South Dakota, and Nevada, as a gold producer and has appreciable proven resources. Notwithstanding the historical record and potential for the future, however, Alaska's gold production was only about 25,000 fine ounces in 1967; only two moderate-sized dredges operated, and there were no large operating mines in the state.

In 1967, the U. S. Bureau of Mines, using various cost-level assumptions, estimated Alaska's total gold resources based on a combination of data from physical exploration, geological factors, and past production. They concluded that gold resources in known Alaskan mines and mine areas,without regard for price considerations, are about 90 million ounces. Reserves and resources established by physical exploration alone, however, are much less than this.

Gold deposits of Alaska can be classified very broadly into two types, placer deposits and lode deposits. Both are closely associated in space, but not necessarily in an economic sense. Thus, the long-continued erosion of gold-quartz veins much too small to mine can produce workable placer deposits. Conversely, very large lode deposits may not produce workable placers because of an unfavorable geologic history or because the gold is too fine to recover. In some areas, such as Fairbanks, both lode and placer deposits have been exploited, but in general, one type or the other is usually dominant. This generalization is true for other Alaskan deposits--the major placer deposits are in the central interior (including Fairbanks), the Seward Peninsula, and in southwestern Alaska, whereas the main lode production has been primarily in southeastern Alaska, and secondarily from Willow Creek, Fairbanks, the Alaska Range, Prince William Sound, and the Shumagin Islands. Only Fairbanks is common to both lists.

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Placer deposits

Two main types of placer deposits have been exploited. One is at Fairbanks and elsewhere in the interior where gold eroded from nearby veins was concentrated in the courses of ancient rivers. In the second type, represented mainly by the Nome district, but also by Yakataga and Lituya Bay, gold was concentrated by marine processes and the productive deposits are mainly modern and ancient beaches.

Resources of placer gold established by physical exploration are known in the Nome and Fairbanks areas, but they are appreciably smaller than the past production of the areas -- roughly 5 and 7.5 million ounces, respectively. Other resources known from physical exploration are in the Livengood district and probably near Nyac. Placer gold is now being exploited at Hog River in the Iditarod district, and on the Seward Peninsula.

Gold in unassessed amounts exists in some deep ground not workable by dredging or by hand drifting. A U. S. Bureau of Mines experimental program is contemplated in the Fairbanks area in 1968 to test the feasibility of mechanized drift mining of such deposits. The very high grade of some of the shallow placer ground mined in the early days, plus advances in mechanized mining, suggest that this approach has economic possibilities.

Lode deposits

The geologic environment of the lode sources is somewhat more varied. The two largest operations, whose combined gold output was about 6 1/2 million ounces, were the Alaska-Juneau mine and the Treadwell group, which worked, respectively, a large, complex system of small veins, and a disseminated deposit in altered igneous rock. Other important production came from rich veins in the Chichagof (one million ounces), Willow Creek (446,000 ounces), and Fairbanks (240,000 ounces) areas, from sulfide-rich shear zones and high-grade veins in the Prince William Sound region (136,000 ounces), and from contact metamorphic deposits at Nabesna (57,000 ounces) in the Chisana district.

Lode resources established by physical exploration, with limited geological extrapolation, are mostly in southeastern Alaska, and include the Juneau, the Berners Bay, and Chichagof areas. Elsewhere in Alaska lode gold resources are in the Chandalar area of the Brooks Range, at the Golden Horn and Nixon Fork mines in southwestern Alaska, in the Nabesna area in eastern Alaska, and in the upper Chulitna district of the Central Alaska Range.

Appreciable gold is also contained in deposits valued principally for other metals, and in the foreseeable future this could be the major gold resource of Alaska. The only large deposit for which even partial grade and tonnage figures are available is Orange Hill, where about 200 million tons of copper-bearing rock contains approximately .02 ounce of gold per ton. Exploitation of this tonnage alone would yield almost as much gold as was produced in the Juneau area, and reasonable geological extrapolations based on it and the nearby Bond Creek deposits suggest that this area may ultimately produce at least as much as the total historical lode gold production of Alaska.

Potential

Alaska has an appreciable fraction of the known gold resources of the United States, and its geological conditions are favorable for further discoveries. The potential for appreciable production exists, but because of economic uncertainties, the future of the gold mining industry remains uncertain.

The potential for large-scale production based on geological extrapolation seems best for deposits of the disseminated type, like those at the old Treadwell mines. These and geologically similar pipe-like deposits near Berners Bay and Chulitna can be exploited by surface mining or by relatively cheap underground methods. Other disseminated deposits are known in dioritic intrusive rocks in the Alaska Range and in the coastal belt of southwestern Alaska. That additional deposits may be found is suggested by anomalous amounts of gold in stream sediments draining dioritic intrusives near Slana. Somewhat similar deposits may be anticipated in southwestern Alaska where productive placers such as those at Flat, Moore Creek, and Candle (Takotna) head in intrusive complexes. One factor that enhances the potential of the disseminated deposits of gold is the possibility of recovering, as byproducts, minerals or metals not recovered in earlier mining. In the Treadwell lodes, for example, molybdenite and rutile occur in quantitatively unassessed amounts. Elsewhere, such as in the complex low-grade mineral deposits in the upper Chulitna area, silver, copper, lead, zinc, and possibly molybdenum and tin might be recovered as byproducts. The Culitna deposits also contain appreciable resources of arsenic.

A more speculative but still real possibility is that disseminated deposits of the Carlin type may be found in Alaska. Geologic criteria for them appear to include the presence of limestone, thrust faults, and high-angle mineralized faults, and such conditions do exist in several parts of Alaska, notably on the Seward Peninsula, in the Brooks Range, and in the Nixon Fork area of southwestern Alaska.

Small-scale production from the underground mining of rich vein deposits appears possible but very likely will not be of more than local importance. One deposit of this type, the Mikado lode near Chandalar, may be exploited in 1968.

Except for the dredge at Hog River, renewed or continued large- or moderate-scale placer operations seem unlikely in the near future. The fact that extensive dredge operations continued at Nome and Fairbanks into the 1960's was mainly a function of the pre-World War II gold price increase and the early mobilization for production. Geologically and economically southwestern Alaska seems to offer some potential for large-scale placer operations because of the sparsity of permafrost and relatively shallow depth of deposits.

The premium price paid by jewelers for coarse gold, and the anticipation of a slightly higher general price under the two-price system, suggest that small-scale placer mining will remain at the present level or generally increase.

Because of the small volume of the product and relatively simple milling problems of some types of lode ores, the constraints on production caused by transportation and technology are not as severe on gold as on some other metals. Gold resources of southeastern Alaska and in the Prince William Sound area are close to tidewater and have ample harbor sites. Harboring is a problem, however, on the Seward Peninsula, where deposits are also close to tidewater. Other potential resources, as in the Willow Creek and upper Chulitna district, are on the railroad belt, but most other districts face moderate to severe transportation problems. One constraint on small-scale lode mining is the shortage of skilled hard rock miners. That this factor may not be too critical is suggested by the short training period required by Alaskan natives in the cooperative program of Kennecott and the University of Alaska and the adaption of Natives to underground work at the Red Devil and other mines.

Iron and Titanium

Because the major iron titanium resources of Alaska are so intimately related geologically, they are treated together in this statement.

In addition to supplying the metal for iron and steel products, iron ore is used in cement and heavy concrete aggregate, paint pigments, basic refractories, nuclear shielding, as a constituent of some catalytic agents, and in nonferrous smelting.

Titanium is used principally in the form of its oxide, mainly for high opacity and chemically inert pigments. In metallic form it is utilized in the aeronautical, missile and space industries where its combined properties of lightness, strength and corrosion resistance are desirable. Alloys of titanium with iron are used in steel-making and as an additive to cast irons.

Resources and potential

Except for testing purposes, there has been no production of iron or titanium ore from Alaska.

Essentially all of Alaska's iron and titanium resources are in mafic igneous rocks that contain disseminations and layers of ilmenite and/or titaniferous magnetite. Such occurrences are widely distributed throughtout southeastern, southern and southwestern Alaska.

The best known southeastern Alaskan deposits are at Klukwan and Haines, Port Snettisham, and Union Bay. All are large but of low grade, ranging between 15 and 35 percent total iron with a titania to iron ratio between 1:5 and 1:10. A small amount of potentially recoverable vanadium also is generally present. The titaniferous magnetite deposit at Klukwan comprises several billion tons of rock that contains 15 to 20 percent total iron, of which 11 to 13 percent is magnetic. Most of the TiO_2 percent can be separated by magnetic concentration. An alluvial fan adjoining the deposit contains several hundred million tons of broken rock that averages 10 percent magnetic iron. The size of the lode deposit at Haines is similar to that at Klukwan, but the magnetic iron content appears to be less than 10 percent. Exploration of the titaniferous magnetite deposit at Port Snettisham by the U. S. Bureau of Mines in 1952-1953 included more than 6,500 feet of diamond drilling which yielded samples that assayed between 11 and 45 percent total iron. A large composite sample contained 18.9 percent iron, 2.6 percent titania, 0.29 percent sulfur and 0.05 percent vanadium. The deposit is believed to contain between 400 and 500 million tons of material from which a high-grade titaniferous magnetite concentrate could be recovered by using standard, comparatively low-cost benefication methods.

The pyroxenitic phase of a zoned ultramafic complex at Union Bay contains 10-25 percent magnetite, some ilmenite, and a minor amount of chromite. Although data on tonnage and grade have not been released by the claim holders, the magnetite content is believed to be about 20 percent by weight throughout an area of about 3 square miles. Magnetite-bearing pyroxenite deposits on Duke and the Percy Islands also have been explored by diamond drilling, but data on tenor and tonnage have not been released.

Layered gabbroic intrusives near North Crillon Glacier and on Astrolabe Peninsula in the St. Elias Range generally contain less than 35 weight percent of ilmenite, but locally as much as 60 percent is present with minor amounts of sulfide minerals. The distribution of magnetite and/or ilmenite in beach sands derived in part from these and related intrusives at Yakutat and Lituya Bays is erratic, but of potential significance. Sampling of the Yakutat beach placers by the U.S. Bureau of Mines shows a general tenor of 35 pounds of iron and 20.5 pounds of TiO_2 per cubic yard. The Lituya Bay deposits were found to contain as much as 52 pounds of TiO_2 (as ilmenite) per cubic yard.

Elsewhere, magmatic deposits of titaniferous magnetite are known at Kemuk Mountain, about 50 miles northeast of Dillingham in southwestern Alaska and east of the north end of Iliamna Lake on the Alaska Peninsula where exploratory diamond drilling of one deposit disclosed several billion tons of material containing 10.5 to 12 percent magnetic iron and 15 to 17 percent total iron. Other deposits occur east of Iliamna Lake in five gabbroic intrusives, two of which are layered. The resource potential of these occurrences is believed to be large, but the recoverable iron is reported generally to be less than 15 percent.

The other types of iron deposits that are widely scattered throughout the state are largely free of titanium, but may contain recoverable amounts of base and precious metals. Included are the contact metamorphic deposits of the Kasaan Peninsula, Copper Mountain, and Jumbo Basin on Prince of Wales Island, southeastern Alaska, and near the Nabesna mine and Orange Hill in the Nabesna district. Many other occurrences are known, but most are either too small or too remote to have encouraged much exploratory work.

The Kasaan Peninsula deposits are best known and consist mainly of magnetite-bearing skarn in fractured greenstone. Analyses from the Mamie mine show 53-59 percent iron, 0.26-0.90 percent copper, and 1.69-3.88 percent sulfur. Sampling of the Mount Andrew mine by the U.S. Bureau of Mines showed an average iron tenor of 47.8 percent, together with 0.32 percent copper, and 0.71 percent sulfur. Total iron reserves of the Mount Andrew-Mamie area are estimated to be about 2,684,000 long tons, of which 2,289,000 tons are classified as indicated and the rest is inferred. The iron resources of the Kasaan Peninsula are probably between 400 and 500 million tons of material that contains 15 to 20 percent total iron.

In the Tatonduk River area north of Eagle, several analyses of hematitic red beds indicate that they contain between 5 and 27 percent Fe_2O_3, but their total resource potential has not been evaluated. A small residual iron deposit on the Sinuk River about 25 miles northwest of Nome is estimated to contain more than 600,000 tons of limonitic material with 10 to 45 percent iron and 0.005 percent manganese.

While it is evident that the iron and titanium resources of Alaska are considerable, it is not likely that they will be economically exploitable in the reasonably near future, except possibly for some of the relatively accessible smaller high-grade contact metamorphic deposits of southeastern Alaska. The outlook for the iron ore industry throughout the world is for a long-term downward trend in price per ton relative to constant dollars. It is therefore not likely that the Alaskan iron resources will be competitive, either as to price or quality, with foreign producers for many years. As for titanium, Alaska is not known to have significant resources of rutile and the annual domestic requirement, estimated to be 225,000 tons by 1970, will have to come from other sources. The state's ilmenite resources are sizable, but largely identified with deposits that must be mined and beneficiated to yield a 45 percent TiO_2 concentrate. It is likely that large known bedrock deposits in Colorado, Wyoming, Arkansas, Rhode Island, and Virginia, will be commercially developed before the 1980's. Certainly, current Alaskan economic trends are not conducive to competition even with such potential domestic sources.

Lead and Zinc

Although the industrial uses of lead and zinc are different, these metals almost always occur together in nature, and therefore are discussed together here.

The principal uses of lead are for storage batteries, tetraethyl lead (gasoline), cable covering, paint pigments, construction, ammunition, and in various alloys including solder and bearing and type metals. Zinc is used in galvanizing, die-casting, in the manufacture of brass and other alloys, and in a great variety of pigments and chemicals.

Deposits containing lead and zinc occur at many places in Alaska. The best known lodes are in southeastern Alaska and at Mt. Eielson southeast of Kantishna. There is an important zinc prospect on Sedanka Island in the eastern Aleutians, and other lead and zinc deposits are at Iliamna Bay on Cook Inlet, on the Seward Peninsula, and near Kantishna and south of Ruby in the central Yukon region. The deposits include three types: those of value primarily for their sphalerite (ZnS) content; those important for their silver-bearing galena (PbS) content; and those in which sphalerite and galena are minor associates of precious metals.

The deposits important for their sphalerite content generally are large and low grade; most contain small but significant amounts of lead and silver, and a few carry abundant copper minerals. The southeastern Alaska deposits, all of which consist of sulfide minerals in metamorphic rocks, are at Groundhog and Glazier Basins east of Wrangell, at Moth Bay and Mahoney Creek near Ketchikan, and at Tracy Arm and Sumdum southeast of Juneau. The Mt. Eielson deposit is also in this category.

The silver-bearing galena deposits are small, but some are high grade. They commonly occur in limestone and metamorphic rocks near granitic intrusions. Sphalerite is a minor constituent. Deposits of this type are in southeastern Alaska at Hyder and at Berg Basin east of Wrangell. Silver-bearing galena also occurs in the Omilak area on the Seward Peninsula.

Galena and sphalerite are minor constituents in the precious metal lodes of the Juneau gold belt in southeastern Alaska, where large-scale, low-cost mining for gold also permitted the recovery of galena.

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Production and Resources

Almost all of the lead produced in Alaska was a byproduct of low-grade gold ores from the Alaska-Juneau mine at Juneau, which by 1946 had yielded more than 40 million pounds of lead. An aggregate total of several hundred tons of lead were also produced from silver-bearing galena deposits near Hyder, on Prince of Wales and Coronation Islands in southeastern Alaska, from Kantishna and the northern Kaiyuh mountains in the interior, and from the Omilak deposit on the Seward Peninsula. A little lead also was recovered from ore shipped from a gold prospect near Flat in the Iditarod district. Zinc concentrates were shipped from Alaska for the first time in 1947. The production amounted to about 11 tons of zinc and was entirely from the Mahoney Creek mine near Ketchikan.

Estimates of resources can be made for only a few of the many lead and zinc deposits in Alaska. The sphalerite deposit on Sedanka Island reportedly contains about 9 percent zinc, but the tonnage is unknown. The argentiferous galena deposits that have been reported are small, but their aggregate tonnage is probably an appreciable part of Alaska's total lead resources. Many low-grade gold deposits in southeastern Alaska contain only small amounts of lead and zinc, but their aggregate value as byproducts of gold mining might be significant. Limited exploration of several of the best known deposits in southeastern Alaska suggest that their total resources probably are on the order of several million tons of sulfide-bearing material averaging about 1 percent lead and 2 percent zinc. Estimated resources at the one productive Mahoney Creek mine are approximately 2,500 tons containing about 6-7 percent lead and 28 percent zinc.

The area adjacent to the Coast Range batholith in southeastern Alaska, which contains the Groundhog Basin, Glacier Basin, and Tracy Arm deposits, has not been thoroughly prospected, and it is reasonable to predict future discoveries of lead and zinc there. Many regions elsewhere in Alaska are virtually unexplored, and additional discoveries of both galena and sphalerite are likely.

Mercury

Mercury has many industrial, medical, agricultural, and electrical uses, and its utilization is increasing with expanding technical knowledge. It has several unique properties that are difficult or impossible to simulate by substitutes.

Production

Although small amounts of mercury were produced in Alaska shortly after 1900, most of the state's total production of almost 35,000 flasks (76 pounds of mercury per flask), was from the Red Devil mine between 1939 and 1963. Since the end of large-scale mining at Red Devil in 1963, Alaska's mercury production has amounted to several hundred flasks, mainly from the White Mountain mine.

Almost all of the state's known mercury deposits are in southwestern Alaska, a region that contains about thirty mercury mines and prospects and constitutes an extensive mercury province. In addition to the Red Devil mine, which has produced more than 30,000 flasks, it includes the DeCourcy Mountain and Cinnabar Creek properties, which have produced more than 1,000 flasks, and several small mines with productions ranging from 10 to a few hundred flasks. Cinnabar, the major ore mineral of mercury, characteristically forms small, shallow deposits. The known Alaskan mercury deposits generally follow this pattern, consisting mainly of cinnabar fillings in faults in diverse brittle rocks. The deposits are localized near a major arcuate tectonic zone characterized by Tertiary volcanism and active faults.

Resources and Potential

Mercury reserves are difficult to estimate because of their sporadic distribution and general confinement to near-surface environment. With few exceptions most Alaska mercury mines have exploited small, but rich near-surface ore bodies with only meager reserves proved in advance. Total known reserves probably range from a few tens to perhaps a few hundred flasks, but their precise magnitude and grade are not known. Estimates of Alaskan reserves of 12,000 flasks minable at $190 per flask and 25,000 flasks minable at $250 per flask were made in 1962 on the assumption of large inferred reserves at the Red Devil mine. The major ore bodies at Red Devil apparently bottomed in the vicinity of the 450 level, and the mine's current known reserves are small. Probably the largest Alaskan mercury reserves are at the DeCourcy Mountain, White Mountain, Cinnabar Creek, and Red Top mines.

Small amounts of byproduct antimony were recovered during the late stages of mining at Red Devil, and antimony is a potential byproduct of a few of the other deposits.

Concealed mercury deposits probably are sporadically distributed throughout parts of the vast terrain of southwestern Alaska. They are inferred because of generally favorable geologic settings, because cinnabar can be panned from many streams in the region, and because only the most readily accessible and best exposed areas have been explored. Prospecting in the region is difficult and curtailed to some extent by the extensive mantle of surficial deposits. Nevertheless, this region still affords a broad target for mercury exploration with reasonable chances for the successful application of panning, geochemical, and physical exploration methods.

The United States is largely dependent on imports to meet its demand for mercury. Production from mines in Spain and Italy has dominated the world mercury market for many years and probably will continue. Historically, mercury has been subject to abrupt fluctuations in price and supply, largely influenced by the Spanish and Italian producers. The continued increase in domestic mercury consumption, including several strategic uses, indicates the need for additional domestic sources.

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Alaska ranks third or fourth in total domestic mercury production, with an output considerably less than California and Nevada. The outlook for increased mercury production from Alaska is good--during the past few years the price for mercury has soured to an all-time high, and after some fluctuations, indications are that it has become fairly stable at relatively high levels of more than $500 per flask. The current high price for mercury should stimulate Alaska mercury mining and exploration both by renewing interest in the known deposits and encouraging the search for new ones. Whether or not Alaska regains or exceeds its former stature as a mercury producer depends on discovering deposits of the magnitude of those mined at Red Devil or closely spaced smaller deposits amenable to large-scale operations.

Molybdenum

Molybdenum, a metal largely used in steel alloys and cast iron, occurs in several minerals, among which the most important is molybdenite (MoS_2).

Molybdenite is known at more than 35 different localities in Alaska, but only a few deposits have been prospected in detail and none has been worked commercially. Most of the occurrences are in south eastern Alaska, the Copper River region, the Cook Inlet-Susitna area, and the Seward Peninsula. The deposits that have been explored most extensively include Orange Hill near Nabesna, the Mt. Hayes prospect in the central part of the Alaska Range, and the Muir Inlet, Baker Island, and Shakan (Prince of Wales Island) deposits in southeastern Alaska.

The largest known deposits are at Orange Hill and at the Nunatak in Muir Inlet. At Orange Hill, known mainly for its porphyry copper, there are approximately 200 million tons of dioritic host rock containing 0.02 percent molybdenum; at the Nunatak, a stockwork associated with a quartz monzonite pluton is estimated to contain about 8,500,000 tons of rock carrying 0.075 percent molybdenum. The resources at Shakan and Baker Island probably aggregate less than 200,000 tons containing 0.27-0.95 percent molybdenum dioxide; the other known Alaskan deposits are small but locally rich.

Platinum Group Metals

Metals of the platinum group include platinum, palladium, iridium, osmium, rhodium and ruthenium. Although platinum is the most abundant and important member of the group, each has important industrial uses. Platinum finds its greatest use in the chemical and electrical industries, where its special properties of corrosion and heat resistance and high electrical conductivity are exploited. Platinum and palladium are both employed as catalysts in the petrochemical industry, but the principal use of palladium is in electrical devices. Iridium, osmium, rhodium and ruthenium are utilized chiefly as hardening additives in alloys of platinum and palladium.

For years Alaska has been America's principal domestic non-byproduct production source, mainly from placer deposits near Goodnews Bay. The company does not release operating figures for publication, but a major part of Alaska's $6,167,000 production in 1966 of commodities that cannot be reported separately (barite, gem stones, mercury, platinum group metals,stone, and tin) must be identified with the production of platinum group metals from Goodnews Bay.

Resources and Potential

With the exception of a single lode deposit in southeastern Alaska, all of the platinum group metals production in the state has come from placers. By far, the most productive have been the aforementioned Goodnews Bay deposits that are apparently related spatially to an ultramafic intrusive. Ultramafic rocks may also be the source of platinum recovered from placers of the eastern Seward Peninsula and at Lituya Bay in southern Alaska. Their production, however, as well as that from southwestern Kodiak Island, the Yentna district about 100 miles northwest of Anchorage, the Chistochina district in the eastern Alaska Range, and from the Kuskokwim and Yukon Rivers regions, has been relatively minor and incidental to the recovery of gold.

The only lode production has come from the Salt Chuck mine, on Prince of Wales Island about 50 miles west of Ketchikan. The mine, which was operated intermittently from 1907 to 1941 mainly for copper, also produced significant amounts of palladium and minor platinum. The platinum group metal content of the ore reportedly averaged 0.25 ounce per ton, with a palladium to platinum of 50:1.

The outlook for significantly increasing Alaskan production of platinum group metals from known sources is largely dependent upon economic factors. Production from the Goodnews Bay deposits has been gradually declining and the reserves are believed to be small. However, additional resources are doubtless present in deeper ground and adjacent to present operations. There is also the possibility of placer concentrations offshore. Such resources probably could be profitably recovered if demand and economics warranted. Ultramafic rocks are widely distributed throughout Alaska, but little is known about their platinum content. The mafic and ultramafic intrusives of southeastern and southern Alaska seem to deserve the most immediate attention, mainly because of their accessibility and proximity to transportation routes.

Silver

Silver, once dominantly a coinage metal, is now largely consumed in photography, electrical applications, and in the arts. Although not known to have been produced by Natives, silver was used by Tlingit and Haida craftsman in historic time.

Silver, in native form or combined with sulfur or other elements, may be considered to be the main valuable substance in deposits containing 100 or more ounces of silver per ton. It is a by-product or coproduct, ranging from less than 1 ounce to a few tens of ounces per ton, in ores valued mainly for their content of copper, lead, zinc or gold. In the lower grade ores silver occurs in sparse amounts as discrete silver minerals and in solid solution in gold and other minerals.

Production

Although silver is the main commodity in some Alaskan mineral deposits, it has been produced chiefly as a byproduct of gold and copper mining. The Alaska-Juneau gold mine produced about 1,950,000 ounces of byproduct silver from 1893 to 1896, and an annual average of 65,000 ounces from 1880 through 1960. Judging from the average fineness of Alaska placer gold more than 3,000,000 ounces of silver have been produced in refining placer gold. The Kennecott ores, famed for their richness in copper, were also moderately rich in silver, with the high grade copper ores averaging 14 to 16 ounces silver per ton. Although silver production is not recorded, the Kennecott mines were probably the largest single source of silver in Alaska. Some silver production has come from small high-grade deposits, notably the Omilak mine on the Seward Peninsula and the Fish Creek veins near Hyder.

Resources and Potential

Silver-bearing deposits of both high grade and byproduct types are scattered widely in Alaska, but are apparently concentrated in southeastern Alaska, on both the north and south flanks of the Alaska Range, in the adjacent Talkeetna and Wrangell Mountains, and in the Seward Peninsula. In southeastern Alaska the main silver-bearing deposits are in the Hyder district, on the Kasaan Peninsula of Price of Wales Island, and east of Wrangell. The deposits at Hyder are of moderate to high grade and are mainly veins carrying complex sulfides. The average grade of about 29,000 tons of complex sulfide-tungsten ore from the Riverside mine was 3 ounces of silver per ton, but the Fish Creek veins, also at Hyder, reportedly contained as much as 700 ounces of silver per ton.

The argentiferous deposits of Kasaan Peninsula and Wrangell deposits, respectively, are rich in copper-iron and lead-zinc minerals. The mineralized rock at the Ground Hog deposit east of Wrangell reportedly contains about 2 ounces Ag per ton. Silver-bearing deposits are also known southeast of Juneau where, for example, the zinc deposits at Tracy Arm contain about 1 ounce silver per ton. Finally, while not of immediate economic value, there is a southward zonal increase in the silver content of the gold lodes at Juneau.

Silver-bearing deposits of the Alaska Range include weakly argentiferous lead-zinc deposits of the Mt. Eielson area, galena-rich deposits in the Kantishna district, and complex ores of the upper Chulitna district. Two areas, reported since 1964, include silver-bearing lodes at Ahtell Creek near Mentasta Pass and at Bowser Creek and adjacent parts of the Windy Fork-Post River region.

On the Seward Peninsula argentiferous deposits occur in the Omilak-Foster area, at the Independence mine on the Kugruk River, and at the Wheeler prospect near Salmon Lake. The Omilak mine and Foster prospect are in limestone on a faulted anticline, and fragments of mineralized material have been found throughout a large area on the same structure.

Alaska has potential for production of silver both as a by-product and from silver-rich ores. Resources of byproduct silver are in the copper-rich deposits of Orange Hill area, in most Alaskan gold deposits, and in many of the lead-zinc deposits. Perhaps the main potential for production of silver is in newly found areas like Ahtell Creek. The occurrence of argentiferous lead-zinc mineralization in limestones near porphyry copper deposits in Nevada and Utah suggests that the geologically similar Orange Hill-Bond Creek area of Alaska may also contain such deposits.

Tin

Tin, used principally in the production of tinplate, various alloys, and in tinning, continues to be in short supply within the United States. However, while total known tin reserves in the United States are insufficient to furnish one year's supply, known world reserves are capable of satisfying demand for 30 to 50 years; therefore, although domestic deposits have a high strategic value, they must compete economically to be productive.

The productive tin deposits of Alaska are essentially confined to the Seward Peninsula, where placers at Buck Creek near Potato Mountain have yielded over 2,000 tons of metallic tin; and where there is moderate current production from a deep but rich placer on Cape Creek. Small-scale placer mining is also being done at Lost River, site of the largest lode deposit known in Alaska. Potentially economic small placers are known at Manley Hot Springs in central Alaska and at Humboldt Creek in the Kougarok River drainage. Traces to small amounts of cassiterite (SnO_2 - the principal ore of tin) are known in a belt trending across Alaska from the Seward Peninsula to the Canadian Border.

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Important tin lodes are confined to the Lost River area, where cassiterite is associated with tungsten, lead, zinc and silver in vein and disseminated deposits that aggregate important tonnages of metal. Potentially minable resources include 2,600 short tons of tin in material averaging 1.3 percent tin; 15,450 short tons of tin in ores containing about 1.0 percent tin; and 18,700 short tons of tin mixed tin-tungsten ores with a tin content ranging from 0.2 to 0.75 percent. Because of difficult mining problems, such as permafrost, lack of water for milling at critical periods, high costs of transportation, and extremely rigorous climate, mining the Lost River lodes will be a relatively high-cost operation. The deposits were drilled by a private company during the recent high price of tin, but did not become productive; hence, one must conclude that production at lower prices is not an attractive venture. However, should our supply of tin from Southeast Asia be cut off, then the Alaskan deposits may be productive. A second favorable factor is the continued rise in silver prices. The Lost River deposits contain silver in amounts ranging up to 20 ounces per ton; with continued high price of silver, production of mixed cassiterite-silver ores may be possible.

Tungsten

Tungsten, the highest melting point metal known, is an important structural material in nuclear and space applications. It also has long been used in lighting and electrical appliances, and in extremely hard, tough alloys for metal-shaping and drilling tools.

Tungsten deposits are widespread in Alaska and consist mainly of scheelite ($CaWO_4$) in tactites that contain between 0.4 and 0.6 percent tungstic oxide (WO_3). During periods of high prices, generally in wartime, Alaska has produced about 8,500 units (a unit is 20 lbs.) of WO_3. About 4,000 units was produced from the Stepovich tactite lode near Fairbanks; 3,500 units came from veins at the Riverside mine in southeastern Alaska; and most of the remainder was from small deposits of scheelite disseminated in schist near Nome.

Moderate amounts of tungsten occur in mixed tin-tungsten lode deposits at and near the Lost River mine on Seward Peninsula, where the main ore mineral is wolframite [$(Fe, Mn)WO_4$]. Estimates include [illegible] units of WO_3 in measured plus indicated resources containing [illegible] percent WO_3; 193,000 units in inferred resources containing 0.5 percent WO_3 and up to 1 percent tin; and 100,000 units in inferred resources containing 0.2 percent WO_3 and up to 0.4 percent tin. Additional small resources are known at the Riverside mine near Hyder, where, mostly during World War II, about 3,500 units of WO_3 were recovered from scheelite-, gold-, silver-, and base metal-bearing veins that probably averaged about 1 percent WO_3. Minor resources also are known at the Mountain View and other prospects near Hyder, in the Fairbanks district, and near Nome. Small amounts of scheelite are widespread in stream placers of the western Seward Peninsula, but no economically important deposits are known.

Although at present there is little likelihood of tungsten production from Alaskan deposits, it is possible that under favorable circumstances a lode mining operation might be established at Lost River, where tin and tungsten might be mined together.

Other Metallic Commodities

Other metallic commodities known in Alaska include arsenic, bismuth, cadmium and nickel.

Arsenic

Arsenic, used in some alloys, and in paint pigments, pesticides, weed killers, and fireworks, occurs in many Alaskan lodes, but no attempt has been made to recover it. The most important arsenic mineral in the Alaskan deposits is arsenopyrite (FeAsS), which is widespread in the gold lodes, especially those near Fairbanks, Chulitna and Nome. It is also common in most of the tin deposits of the Seward Peninsula, particularly at the Lost River mine. Other arsenic minerals include orpiment and realgar (both arsenic sulfides), small amounts of which occur in the state's quicksilver lodes.

Bismuth

Bismuth, utilized mainly in metallurgical processes, in a number of alloys, and in medical and cosmetic preparations, occurs in a few deposits in Alaska, but is of relatively minor importance. Bismuthinite (Bi_2S_3) and native bismuth are reported near Nome, Nenana, and Fairbanks, and in the Salcha River drainage, where they are associated with gold and tungsten in thin quartz veins in igneous and metamorphic rocks.

Cadmium

Used chiefly in electroplating, pigments and low melting-point alloys, cadmium is a persistent minor element in most sphalerite (ZnS) deposits. Although the cadmium content of most of the Alaskan sphalerites is not known, it probably could be recovered if the zinc deposits were exploited. A sample of sphalerite from a deposit east of Wrangell in southeastern Alaska contained 0.46 percent cadmium and the estimated cadmium resources are about 400 tons.

Nickel

Nickel, consumed mainly in stainless steels, armor place and in the manufacture of alloys with special temperature, chemical and magnetic properties, is known in several lodes in Alaska. Large, low-grade deposits occur in southeastern Alaska on Yakobi, Chichagof and Baranof Islands, and on Brady Glacier about 85 miles west of Juneau. A small, low-grade deposit is near Spirit Mountain south of Chitina. All of the deposits are sulfice-bearing parts of basic intrustive rocks.

Exploration of several of the southeastern Alaska deposits has been considerable, albeit incomplete, and estimates of their nickel resources aggregate more than 23 million tons of material containing 0.16 to 1.54 percent nickel. The deposits also contain small but significant amounts of copper, and a few carry traces of cobalt. While there has been no production of nickel ore in Alaska, the southeastern Alaska deposits nevertheless constitute an important part of the nickel resources of the United States.

Radioactive Fuels

The only significant radioactive fuels are uranium and thorium, with uranium currently by far the more important of the two. Mostly, uranium and thorium are used in armaments and in nuclear reactors for generating electrical power. Other uses and potential uses are in explosive devices for peaceful industrial use, various medical and research applications of radioisotopes, water desalting, and as power sources for propulsion.

The only Alaska production of radioactive elements consisted of about 30,000 tons of uranium ore that was mined between 1957 and 1963 from the Ross-Adams mine on southern Prince of Wales Island in southeastern Alaska. The ore contained slightly less than 1 percent U_3O_8 and similar amounts of ThO_2, but the thorium was not recovered because of costly extractive processes. The only significant reserve of uranium and thorium ore in Alaska is at the Ross-Adams mine where about 10,000 tons of ore believed to average slightly less than 1 percent each of U_3O_8 and ThO_2 are blocked out. Small resources of uranium, thorium, niobium, and rare earths are present in prospects near the Ross-Adams mine, but they are erratically distributed and probably two small to be exploited. Another small thorium and rare earth occurrence is near Salmon Bay on the northern part of Prince of Wales Island. None of the numerous other small occurrences of radioactive minerals known throughout Alaska appear to have significant economic potential.

The current strong demand for uranium has led to the planned reactivation of the Ross-Adams mine and should stimulate uranium prospecting in Alaska. This demand is expected to continue throughout the 1970's to meet the anticipated increase in uranium-fueled reactors. The immediate economic future of thorium is contingent on the development of competetive passive thorium-fueled reactors.

Nonmetallic Mineral Resources

Alaska's nonmetallic minerals that have potential for use in the chemical, metallurgical, ceramic or construction industries include asbestos, barite, clay, fluorite, graphite, gypsum, limestone and marble and lightweight construction and insulative materials. Deposits of feldspar, garnet, mica, quartz crystal, and sulfur are also known, but all are small or low grade and none is considered to have economic potential at present. Resources of sand, gravel, and crushed and broken stone occur throughout the state and are, in general, sufficient to meet future requirements. These commodities will not be considered further except to note that in 1967 the value of sand and gravel production was about $27,683,000, an important part of Alaska's total mineral output for that year.

Asbestos

Asbestos, used principally in cement and building materials, has been found at several localities in Alaska, but only three have been studied enough to indicate their potential. These are in the Kobuk area in north-western Alaska, and on Admiralty and Lemesurier Islands on southeastern Alaska.

The asbestos deposits near Kobuk consist of tremolite and minor chrysotile erratically distributed in serpentine in a belt about 45 miles long. The asbestos occurs in podlike veins, the largest of which contained 36 1/2 tons of asbestos of high purity but weak tenacity. The Admiralty Island deposit is in schist and consists of tremolite asbestos in a zone 1 1/2 feet wide and 14 feet long. Tensile strength of some of this material was tested but found too low to meet commercial specifications. The Lemesurier Island occurrence consists of the unusual mineral paligorskite, an asbestos-like substance with pulpy, leathery characteristics. It has no known commercial use at present.

The only asbestos mined in Alaska has been from the Kobuk deposits, where, under the stimulus of high wartime prices and demand, a total of about 72 tons of high-grade tremolite and 1 ton of chrysotile were produced between 1943 and 1945. The asbestos resources of Alaska have not been measured, but they probably are small. The limited thickness and extent of the serpentine bodies that normally enclose the asbestos minerals make it unlikely that deposits of major importance will be found in the future.

Barite

Deposits of barite, an important constituent of rotary well-drilling fluids, are known only in southeastern Alaska. At present, the only production is from a mine in Duncan Canal near Petersburg, where high-grade barite has replaced parts of limestone country rock along faults. Fifty thousand tons of barite ore were shipped from this deposit in 1966, and production was expected to continue for several years. Barite deposits are also known at Lime Point on Prince of Wales Island, where a small shipment was made early in the century, and near Cornwallis Peninsula on Kuiu Island.

Estimated resources of barite at the currently active mine in Duncan Canal are unknown; at Lime Point there are about 5,000 tons of barite above sea level. Additional barite deposits of commercial significance may occur in the extensive limestone belts of southeastern Alaska and possibly in geologically similar areas such as the western Seward Peninsula.

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Clay

There are relatively few large deposits of clay in Alaska. Of those that are known, none is of the high-alumina type that might be used as a source of aluminum. Clay in the Anchorage and Juneau areas was used to manufacture bricks but these operations were discontinued, not because of a shortage of clay, but because of improper firing techniques. Many clay and shale deposits in the Alaska Railroad belt have been sampled and tested, but only a few are suitable for brick and tile and none found to date is of fire clay grade. Large deposits of clay suitable for manufacture of heavy ceramic products are known in the Healy coal field and near Homer on the Kenai Peninsula. A small number of refractory bricks have been produced from a clay deposit at Sheep Mountain in the upper Matanuska Valley. Clay that may be suitable for use in drilling mud occurs near Summit Lake on the Richardson Highway, and there is excellent quality kaolinite at the Lost River mine on the Seward Peninsula.

Fluorite

Fluorite, the principal raw material of fluorine, is widely distributed in Alaska, but the only place that it is known to occur in commercially significant amounts is in the Lost River area on Seward Peninsula. Minor deposits of the mineral are on Zarembo Island and east of Wrangell in southeastern Alaska, and near Fairbanks. To date, there has been no production of fluorite in Alaska.

The fluorite in the Lost River area is associated with tin and beryllium deposits. Total estimated resources are about 2 million tons of 50 percent fluorite, most of which could be economically recovered only as a byproduct of tin and beryllium mining. Additional deposits of fluorite may be found in the western Seward Peninsula, in the southern Brooks Range, and in southeastern Alaska, where extensive limestone deposits have been intruded by granitic rocks.

Graphite

The only area in Alaska that contains graphite deposits of potential economic importance and from which production has been recorded is in the Kigluaik Mountains of Seward Peninsula. Deposits have also been reported on the Kenai Peninsula and in northwestern and southeastern Alaska, but little is known about their size and grade.

The Kigluaik deposits, which consist of graphite lenses in metamorphic rocks and pegmatite dikes, have produced a total of about 270 tons of graphitic material, mostly before World War I. Estimated resources of these deposits include 65,000 tons of rock containing 52 percent graphite, and about 300,000 tons of graphite in rock of lower grade.

There appears to be an opportunity for the development of a large amount of graphite from relatively high-grade deposits on Seward Peninsula. Much of the area has not been explored in detail, and the chance of discovery of additional resources is good.

Gypsum

Deposits of gypsum, a mineral used in large amounts in construction and agriculture, have been reported in only two localities in Alaska. These are on Chichagof Island in southeastern Alaska and at Sheep Mountain near the head of the Matanuska Valley.

The Chichagof Island deposit, originally thought to be sedimentary but now considered to be mainly of replacement origin, is associated with limestone and chert. It produced about 500,000 tons of ore between 1902 and 1926, when operations ceased due to apparent exhaustion of the deposit. Exploration since then shows that some gypsum still remains, but there is little likelihood that there is enough to be commercially important.

The deposits on Sheep Mountain consist of irregular masses of gypsum that have replaced parts of altered volcanic rocks. About 50 tons of gypsum were produced in 1957 but no production or development work has been recorded since then. Estimated resources are about 660,000 tons of gypsiferous rock averaging 25-30 percent gypsum.

There probably are additional deposits of gypsum in southeastern Alaska, especially in association with the thick limestone sequences, but they will be difficult to find because outcrops of the very soluble gypsum rock are apt to be rare in this area of high rainfall and dense forest.

Limestone and Marble

Deposits of high-calcium limestone and marble suitable for portland cement and industrial use are widely distributed in Alaska, but the most accessible and best known deposits are in western islands of southeastern Alaska. In addition, large masses of relatively pure limestone occur in the Kings River area of the Matanuska Valley and near Hollywood and at Foggy Pass on the Alaska Railroad. A small limestone deposit formerly used as a source of lime and small deposits of marl (calcareous clay) are near Anchorage. Other deposits include thick, extensive limestone sequences of unknown chemical composition in the Wrangell and Talkeetna Mountains, and near Fairbanks.

Although there is no production at present, the Permanente Cement Company announced plans in 1963 to utilize limestone in the Kings River area for the manufacture of Portland cement. In the early part of the century marble was quarried at several places in southeastern Alaska for use as building stone, and between 1928 and 1949 approximately 2,150,000 tons of limestone was produced on Dall Island (southeastern Alaska) for use in Portland cement.

Total resources of high-calcium limestone, locally of metallurgical grade, in southeastern Alaska are enormous, the aggregate volume of some of the better deposits exceeding 1 billion tons. The Kings River deposits in the Matanuska Valley are favorably situated, and, while no data are available on their tonnage, they are of high purity and occur throughout a large area. The Foggy Pass deposit is of suitable composition and large enough to be used in the manufacture of Portland cement. Resources at the deposit include 8-14 million tons of broken rock and roughly 190 million tons of bedrock. The known marble deposits in the Anchorage area are too small and variable in composition to be used for Portland cement, but they do have some potential as fertilizer.

Lightweight Construction and Insulative Materials

Lightweight and insulative building materials in Alaska consist of diatomaceous earth (diatomite), haydite raw material, perlite, and pumice. These materials serve not only as thermal insulation, but their low apparent density makes them useful in lightweight concrete blocks or as lightweight aggregate in structural concrete.

Diatomaceous earth, an unconsolidated material consisting of the siliceous remains of minute plants, occurs near Kenai, where the largest and purest of several deposits contains about 200,000 cubic yards of material averaging about 70 percent diatomite by weight. The deposit is accessible and well situated with respect to transportation by sea and road.

Raw material for haydite, an expanded (bloated) shale or clay, occurs in the Matanuska Valley, on the Kenai Peninsula, at Indian River on the Alaska Railroad, and near Homer. The Matanuska Valley deposits contain large resources and are close to transportation, fuel, and a market.

Perlite is a glassy volcanic rock that when heated rapidly to about 1,700°F., suddenly expands to a cellular glass similar to natural pumice. Perlite deposits have been found near Healy and in McKinley National Park, but only the perlite near Healy has favorable expanding properties. The deposit, however, is too small to be of commercial value.

Pumice, a naturally occurring frothy, and hence lightweight volcanic rock, occurs in potentially commercial amounts near Katmai and on Augustine Island in the Alaska Peninsula-Cook Inlet Region. Pumice was produced from the Katmai deposits in 1947, and from the Augustine Island deposits in the period 1946-1949. Of the known deposits, those near Katmai are the largest, best quality, and most accessible, and,therefore,probably of greatest economical potential. Future exploitation of the Augustine Island pumice depends on the discovery of additional substantial deposits and development of safe navigational facilities. Other pumice deposits in the Alaska Peninsula-Cook Inlet Region are remote and relatively inaccessible, and unless there is an unusual demand for pumice, they will probably remain of little commercial value.

LEASABLE MINERAL RESOURCES

The most important laws enacted by the Congress pertinent to mineral development of the public domain are the General Mining Law of 1872, governing lode and placer claims of metalliferous minerals, including uranium; and the Mineral Leasing Act of 1920, as amended, that covers all deposits of coal, oil, gas, and oil shale; phosphate and phosphate rock, sodium, potassium, sulphur and bituminous rock. The Director of the Geological Survey is authorized and responsible under the various Acts of Congress and Secretarial Orders to classify lands as valuable for their leasable minerals in order to retain the mineral rights in federal ownership. This classification authority under the provisions of the Mineral Leasing Act of 1920, as amended, repeals the General Mining Law of 1872 as to the minerals named in the Mineral Leasing Act. Such minerals are no longer subject to location but only to lease.

In this report the leasable minerals discussed include coal, oil, gas, and oil shale; and phosphate, sulphur, bituminous rock and geothermal resources. Available geologic information for these mineral commodities is less than adequate for much of Alaska, yet enough is known so that some significant conclusions may be drawn concerning Alaska's potential for mineral resources. The relation between the leasable mineral resources and the geology of general areas is considered and is followed by more detailed descriptions of specific commodities. All conclusions in this text are based on published literature of the U. S. Geological Survey, and the Alaska Division of Mines and Minerals. Specific references are cited in the text and at the end of the report.

Geologic and Tectonic Setting

Alaska is comparable in geology as it is in physiography with the western part of the conterminous United States and western Canada. Major belts of geology can be traced northward across western Canada and westward into Alaska. From the Pacific Coast north to the Arctic Ocean, the major geologic features encountered are similar to those encountered from the Pacific Coast eastward in western conterminous United States and western Canada. A broad summary of the geology of the many sedimentary basins, and related mineral resources is given in the U. S. Geological Survey Bulletin 1094 (1959) up to January 1, 1956, and in the Senate Document 31-068, Mineral and Water Resources of Alaska, 1964. In this discussion of leasable mineral resources the regions chosen for the statewide land and resource analysis are not completely compatible with existing geological and mineral commodity data. Therefore, the regional aggregates used for the "provinces" of this discussion may be at variance with other source material.[18]

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[18] Province is used here descriptively as an aggregate of the standard regions chosen for this report.

Alaska Peninsula-Cook Inlet Province

The sedimentary province discussed here generally covers five of the fifteen regions chosen for historic land and resource analysis in this report. It includes the Bristol Bay, Cook Inlet, and Copper River Regions, the west part of the Kodiak Region and the Alaska Peninsula within the Aleutian Region. The locations of the commodities are cross referenced to these Regions.

The geologic setting in this province is described briefly. Mesozoic rocks whose composite thickness exceeds 30,000 feet, and the overlying Tertiary rocks whose composite thickness may exceed 25,000 feet, underlie this province. The Tertiary rocks have been proven favorable for petroleum in the Cook Inlet Basin. Marine sedimentary rocks of Mesozoic age extend along the southeast side of the Peninsula from Kamishak Bay to Ugashik Lake and then southwest to Port Moller. These rocks contain a number of oil and gas seeps, and have produced shows of oil and gas in test wells. At Puale Bay on the southeast side of the Alaska Peninsula unmetamorphosed Late Paleozoic volcanic rock and limestone underlie the Mesozoic strata, and southwest of Ugashik Lake, the Mesozoic rocks are overlain by Tertiary marine and nonmarine sedimentary rocks. The sedimentary rocks of the Alaska Peninsula are intruded and overlain by volcanic rocks. The igneous masses are numerous and of moderate size but are fairly small areawise in comparison with the total area of the province. The oil and gas potential of this province is unknown. In spite of abundant oil seeps and favorable geologic structure the sedimentary rocks tested on the Alaska Peninsula have proven commercially unproductive to date.

Tertiary nonmarine sedimentary rocks have a wide extent in the Cook Inlet subprovince which is the only petroleum producing area in Alaska. Sedimentary and volcanic rocks of Permian-Triassic age crop out locally along the margin of Cook Inlet and may underlie the basin. It is estimated that as much as 9,000 feet of marine and nonmarine volcanic and tufaceous sedimentary rocks of Early Jurassic age overlie the Triassic rocks, and that they are overlain by marine rocks of Middle Jurassic to Late Cretaceous age which have an aggregate thickness of 23,000 feet. This sequence has yielded shows of oil and gas but no commercial deposits have been found in them. The oil and gas productive sedimentary rocks in the Cook Inlet Basin are assigned to the Kenai Formation of Tertiary age. They have an aggregate thickness of about 25,000 feet and rest unconformably on Mesozoic rocks. The Hemlock zone, the basal part of the Tertiary sequence, is composed of coarse-grained clastic rocks with some coal beds and is oil-bearing in the Swanson River-Soldotna Creek field, and in the Middle Ground Shoal, Trading Bay, and Granite Point fields in Cook Inlet.

The upper part of the Kenai Formation consists of medium-to coarse-grained sandstone, siltstone, and coal, and is gas productive. However, in some of the new oil field discoveries the upper part is also oil productive. The Kenai Formation is believed to underlie the southern part of Cook Inlet.

The southern part of the Copper River region is underlain by rocks of Mesozoic age which are considered deposited in the same basin and contain the same petroleum indications as the sequence in Cook Inlet. Much of the basin is overlain by as much as 1,000 feet of gravel deposits of Quaternary age. Paleozoic sedimentary rocks crop out along the margin of the basin, and where exposed they are interbedded with volcanic rocks. The Triassic and Lower Jurassic rocks which underlie the basin include both marine sedimentary and volcanic rocks. These rocks, where unmetamorphosed, could be petroliferous. Marine clastic sedimentary rocks of Middle Jurassic to Late Cretaceous age have an aggregate thickness of 25,000 feet and are believed to underlie much of the province. Some of the claystone and siltstone beds emit a fetid odor from a freshly broken surface, and may contain the chief source of petroleum possibilities. The Tertiary sediments are thin or absent over much of the Copper River Basin. To date oil exploration activity consists of eight unsuccessful test wells 4,818 to 8,857 feet deep, which encountered small shows of gas, or salt water and gas at high pressures. Exploration work is continuing in the Copper River Basin.

Petroleum and Natural Gas

Oil and gas seeps were discovered on Cook Inlet and the Alaska Peninsula about 100 years ago. These first discoveries were made by the Russians about 1853 in the Iniskin Peninsula area of the Chinitna District on the west side of Cook Inlet. Samples of oil were collected by the Russians in 1882. The first oil and gas claims were staked in 1882 near the seeps on the Iniskin Peninsula by a prospector named Edelman. The claims were abandoned but in 1896, during a period of oil and gas activity, claims were again staked on the Iniskin Peninsula. Several shallow wells were drilled but the first exploration activity which ended in 1904 was unsuccessful.

After the passage of the Oil and Gas Leasing Act in 1920, exploration activity was renewed in southern Alaska. From 1923 to 1926, 5 wells ranging from several hundred feet to 5,024 feet were drilled on the Pearl Creek Dome of the Ugashik anticline without finding oil or gas in commercial quantities. During the Twenties some attention was given to oil and gas exploration in the Cook Inlet area. A well drilled near Anchorage in 1920-1921 was reported abandoned before reaching bedrock. Between 1926 and 1930 drilling was intermittent at a site 2 miles west of Chickaloon in the Matanuska Valley.

Leasing activity was revived in the Chinitna District in 1933 and 1934; and a test well drilled on the Fitz Creek anticline in 1938 and 1939 was abandoned at a depth of 8,775 feet. Exploration activity continued from 1940 to 1955 in southern Alaska, and a number of test wells were drilled in the Chinitna District and in the Cook Inlet-Susitna area.

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Near the end of 1955 at least 23 test wells with an aggregate footage of 53,000 feet were drilled in the Alaska Peninsula-Cook Inlet province. Shows of oil and gas were found in many wells but no commercial production was attained to the end of 1955. The Swanson River-Soldotna Creek oil field was discovered in 1957 in the northern part of the Kenai lowlands. The oil field was unofficially estimated to contain an ultimate recoverable oil reserve of about 125 million barrels. Since 1957, four more oil fields and nine gas fields have been discovered. The Cook Inlet Basin is unofficially estimated to contain reserves of 1.3 billion barrels of oil, and 5 trillion cubic feet of gas.

The Cook Inlet Basin is the only basin within the state in which extensive commercial oil and gas deposits have been found and in which extensive development has taken place. At the present time there are five producing oil fields and three gas fields producing for commercial and beneficial utilization.

The statewide cumulative oil production to December 31, 1967, was 97,700,000 barrels. The current daily average production is approximately 150,000 barrels per day. The statewide cumulative gas production to December 31, 1967, was 134,876,000 MCF, with a current daily average of approximately 200,000 MCF per day. All the produced oil is marketed and approximately three-fourths of the produced gas is either marketed or is being beneficially used.

All the produced dry gas and almost all casing head gas produced from upland wells is being beneficially used. Up to the present time (April 1968) only a small portion of the casing head (oil associated) gas produced from the submerged land wells in the Cook Inlet is being beneficially used. The oil industry is and has been formulating plans for the beneficial use of the now vented gas. Fuel oil fired engines are being converted to gas fired, gas lift equipment is being installed, market studies are being made and use for secondary recovery is being investigated. The Mines and Mineral Division of the State Department of Natural Resources is also prompting the beneficial use of the now vented gas.

Published reserve estimates of Swanson River-Soldotna Creek field are in the neighborhood of 125,000,000 barrels. Thorough reservoir studies of the four other fields, all on submerged lands in Cook Inlet, are presently being conducted by the Industry, and pilot programs of water injection for pressure maintenance and secondary recovery are being initiated. Only in the event repressuring programs are as successful in the Inlet fields as in the Swanson River-Soldotna Creek field can it be assumed the present rate of production can be maintained for any reasonable length of time. Although several new wells have been placed on production the past few months, the total production rate has not increased significantly. A very rapid decrease in reservoir pressure is being experienced as well as an increase in gas-oil and water-oil ratios. Swanson River-Soldotna Creek field also experienced a rapid reservoir pressure decline until pressure maintenance was initiated. The Cook Inlet oil fields have reservoirs and producing characteristics similar to the Swanson River-Soldotna Creek field.

Contract commitments for gas delivery indicates approximately 2 billion MCF of natural gas will be sold within the next 20 years. Approximately one-half of contract commitments are for local consumption while the other half will be used in manufacturing processes with most of the products sold in foreign markets.

Oil Shale

There are no known occurrences of oil shale in this province.

Bituminous Rock

The possibility of exploiting oil shale or bituminous rock in Alaska has not been seriously considered. By law, oil shale lands in the public domain have not been opened to leasing since 1933. However, solid and semi-solid bitumens, bituminous rock and native asphalt referred to in this report as bitumens are a leasable mineral. The deposits are usually small and occur as petroleum residue in the vicinity of active oil seeps, or as solid asphaltic material filling veins or fractures in sedimentary rocks. The known occurrences are shown on the maps at the end of the chapter; a brief description is given of each deposit.

... Oil Creek: The oil patch covers an area of roughly 3 acres near the head of Oil Creek about 5 miles west of Cold (Puale) Bay on the Alaska Peninsula. It is an accumulation of residue derived from an oil seep issuing from rocks of Jurassic age and appears to be intermixed with vegetation, soil, and other materials. The deposit is from 1 to 6 feet thick. The residue was used satisfactorily as boiler fuel in drilling operations in 1904 and 1905.

... Barabara Creek: The residue covers one acre on the north side of Barabara Creek at the head of Ugashik Creek south of Becharof Lake. The seep is in rocks of the Naknek Formation of Jurassic age.

... Pearl Creek: A small residue patch on Pearl Creek about one mile northeast of Barabara Creek. The patch is about 3,000 square feet in extent and is several feet thick. The seep is in rocks of the Naknek Formation of Jurassic age.

... Wide Bay: Solid hydrocarbons occur in stringers along fault planes and in fissures in rocks of Middle Jurassic or Upper Jurassic age. The material which resembles Utah Gilsonite has a maximum width of 2 inches in fractures and is thought to be residue of oil from seeps in this area (Smith, 1926).

... Chignik Lagoon: A petroliferous sand located on the northwest shore of Chignik Lagoon. The deposit consists of an oil saturated 100-foot sandstone in the Chignik Formation of Upper Cretaceous age. Another sandstone interval that is lower in the Chignik Formation is locally petroliferous.

There is no production from these deposits to date. The residue patches are of limited extent and appear to have little value. There is no indication that the deposits in these areas have been utilized by the Natives. Additional studies will be required to evaluate the future potential of this resource.

Coal

The first coal mine in Alaska was started by the Russians in 1855 at Port Graham on the southwest tip of the Kenai Peninsula, but it was abandoned after about 10 years of operation. The existence of claims on coal seams west of Coal Point (Homer Spit) were reported belonging to Russian "Creoles" of Ninilchik, but no information is available as to whether or not the claims have been worked (17th Annual Report, p. 791). In the period 1880-1915, coal mining was attempted for short periods at Unga Island, Herendeen Bay, Chignik Bay, and Kachemak Bay. During this period the total annual production did not exceed a few hundred to a few thousand tons except in 1907 when a production of 10,000 tons was reported. The era of sustained coal production in Alaska began with the completion of the Alaska railroad to the Matanuska coal field in 1916 and the Nenana field in 1918. The coal fields are shown on the maps at the end of the chapter.

The Alaska Peninsula-Cook Inlet province of southcentral Alaska includes the Herendeen Bay, Unga Island, Chignik, Broad Pass, Matanuska, Susitna, and Kenai coal fields. The coal of Herendeen Bay and Chignik coal fields are both bituminous and lignite, and of Cretaceous and Tertiary age, respectively; the Unga Island field contains lignite of Tertiary age. The coal of Broad Pass, Susitna, and Kenai fields is subbituminous and lignite, and that of the Matanuska field ranges from subbituminous to anthracite, the greater part being bituminous.

Herendeen Bay coal field: Coal-bearing rocks of the Chignik Formation of Late Cretaceous age underlie about 40 square miles on the Peninsula between Herendeen Bay and Port Moller about 350 miles southwest of Kodiak. The beds are moderately folded, and broken by several faults, one of which has a throw of at least 1,000 feet and marks the south margin of the coal field. Most of this coal is bituminous and occurs in a large number of rather closely spaced beds ranging from a few inches to 7 feet in thickness. Little is known of the extent or continuity of individual beds, and no reliable estimates of reserves are possible. Tertiary lignite bearing beds extend several hundred square miles to the south and east of Herendeen Bay. Available information from reconnaissance investigations indicate that few, if any, lignite beds are of economic value.

Some development work was done in the bituminous coal of this field between 1880 and 1902, but no commercial production was attained. Although the field is readily accessible to tidewater, Herendeen Bay is blocked by ice several months each year. Past plans for development have included the construction of 15 miles of railroad through a low pass to Balboa Bay on the Pacific side of the Peninsula which reportedly provides a good ice-free harbor.

Chignik coal field: The coal field (Atwood, 1911) is on the west shore of Chignik Bay on the south side of the Peninsula about 250 miles southwest of Kodiak. It is near the village of Chignik. Coal bearing rocks of the Chignik Formation of Late Cretaceous age underlie a northeast trending belt about 25 miles long and 1-3 miles wide along Chignik Bay. Some development of the coal deposits was done at four localities, but none of the beds was traced any distance. The coal is bituminous and the beds range from 1-5 feet in thickness; although most beds contain less than 3 feet of coal, all are high in ash. Information on the structure of the field are not well known, but the beds appear moderately folded with dips from 21-34°. The beds at one locality are cut by at least three normal faults. Development of the field would require construction of a road through a low pass to the head of Kuiukta Bay about 5 miles south of the field because there are no harbor facilities at Chignik Bay. There is insufficient data available for reliable reserve estimates.

Unga Island coal field: Tertiary lignite bearing rocks underlie an area of about 40 square miles in the northwest part of Unga Island (Atwood, 1911). A section measured in the beach bluff on the west shore of Coal Harbor (Zachary Bay) includes nearly 300 feet of poorly cemented sand, clay, and gravel interbedded with 5 beds of lignite ranging from a few inches to 4 feet in thickness. The beds dip uniformly 8-10°W. and are overlain conformably by 200 feet of conglomerate. The analysis indicates low heating values and a high ash content. Some development work was done in the field in 1911, but there was no significant production.

Broad Pass coal field: The Broad Pass coal field lies just south of the Divide of the Alaska Peninsula on the headwaters of the Chulitna River. It consists of two districts, one near Broad Pass on the

Alaska railroad (Hopkins, 1951) and the other on Costello Creek (Wahrhaftig, 1944;Rutledge, 1948), about 11 miles west of the railroad from Colorado Station. The coal at Costello Creek is subbituminous and covers about an area of 7 square miles, and that near Broad Pass Station is lignite and covers about 1-1/2 square miles.

Coal resources on Costello Creek in 1943 were estimated at 350,000 tons of indicated coal, but most of this has since been removed or lost by mining. From 1940-1954, the total reported production was about 64,000 tons. Resources in the Broad Pass District in 1944 were estimated to be 13 million tons, but larger tonnages probably exist in adjacent unmapped areas.

Susitna coal field: The Susitna coal field is here defined as the coal bearing part of the extensive lowland north of Cook Inlet between the Talkeetna Mountains on the east and the Alaska Range on the north and west. The coal is in the Kenai Formation of Tertiary age which underlie at least 3,400 square miles of lowland covered by glacial and alluvial deposits. Barnes (1966) determined most of the potentially valuable coal deposits underlie a 400 square mile area in the basins of the Beluga and Chulitna Rivers. The field is undeveloped, and without roads; some of the best coal deposits are close to tidewater.

A large number of coal beds of subtituminous coal and lignite ranging from a few inches to more than 50 feet in thickness are exposed in the Beluga-Chulitna area. The bed, 30-50 feet thick was traced 7 miles along the middle course of the Chulitna River and a similar bed 50 feet thick was traced 4 miles along the toe of Capps Glacier. Other thick coal beds crop out on the Beluga River, Skwentna River, Canyon Creek, and Fairview Mountain in the Yentna River Basin.

The estimate of indicated coal resources in the Susitna field is given as 2,394.7 million tons. No estimates of inferred resources were made because of general lack of evidence of continuity of coal beds beneath covered areas. As estimates were made within a half-mile of the coal crop, the total potential may be several times greater than indicated.

Matanuska coal field: The coal field underlies much of Matanuska Valley and includes several areas of Tertiary coal bearing rocks extending from the head of the valley westward to the Susitna River. The coal increases in rank progressively eastward from subbituminous coal in the Little Susitna District to anthracite in the Anthracite Ridge District. The Little Susitna District (Barnes and Sokel, 1959) lies at the western end of the coal field between the Little Susitna River and the southern front of the Talkeetna Mountains. Subbituminous coal occurs at several localities in the district but they appear too thin or impure to be minable. A strip mine was operated for several years near Houston, but the recoverable coal is largely mined out and the mine is closed.

The Wishbone Hill District (Barnes and Payne, 1956) is on the north side of the Matanuska Valley about 10 miles northeast of Palmer. The coal bearing Chickaloon Formation of early Tertiary age underlies an area of 15 square miles between Morse and Granite Creeks. The structure is dominated by a northeast trending syncline, with moderately dipping limbs, which is broken by several transverse faults. The coal occurs in a large number of beds ranging from a few inches to 23 feet in thickness, and is high volatile bituminous in rank. The total estimated reserves in indicated and inferred categories for the Wishbone Hill District is 112,000,000 tons.

The Chickaloon District (Capps, 1927) includes an area of about 12 square miles at Chickaloon on the Chickaloon River, about 30 miles northeast of Palmer. The coal bearing Chickaloon Formation is known to underlie a large area, however, the economically valuable deposits are at Chickaloon north of the Matanuska River, and on Coal Creek south of the river.

The structure is dominantly synclinal, but belts of tight folding are locally superimposed on the syncline. Furthermore, the structure is cut by many faults, some of which are of rather large displacement. The coal bearing rocks have been intruded by many igneous masses in the form of dikes and sills.

The coal is low volatile bituminous in rank and some may be of coking quality. The beds are lenticular and range from a few inches to 14 feet in thickness. The district has not been developed because the coal has been crushed and faulted and intruded by igneous rock making it difficult and expensive to mine. The estimated coal reserves in indicated and inferred categories is 25,000,000 tons.

The Anthracite Ridge District (Waring, 1936) lies at the eastern end of the Matanuska coal field about 12 miles east of Chickaloon. The field is about 30 square miles in area and extends from the south slope of Anthracite Ridge southward to the Matanuska River. The coal bearing Chickaloon Formation of Tertiary age has been intruded by many igneous sills from a few inches to many hundreds of feet in thickness. The structure is in broad open folds but along the north margin of Anthracite Ridge, the rocks are deformed into tight locally overturned folds and are broken by several high angle faults. The coal ranges from anthracite and semianthracite in the northern part to bituminous in the southern part. At two localities, coal beds 34 and 24 feet thick were measured and also beds containing between 5 and 10 feet of coal. Most beds were thin and lenticular. Although several millions of tons of coal including possibly a million tons of anthracite are probable, the irregular thickness, complex structure, and intrusive bodies present discourage development. There are no reliable resource estimates.

Kenai coal field: The Kenai coal field lies on the west side of the Kenai Peninsula on the lowland between the Kenai Mountains and Cook Inlet. The coal bearing Kenai Formation of Tertiary age is exposed at many places in the southern part of the lowland referred to as the Homer District. The northern part or Kenai District is completely concealed by glacial and alluvial deposits, but the presence of the Kenai Formation was originally inferred from its presence in outcrops north and west across Cook Inlet. The inference was conformed as the result of drilling of test wells. Many coal beds as much as 50 feet thick have been penetrated in the test wells, but due to the depth of surficial deposits, any valuable coal deposits are not economically recoverable.

The Homer District (Barnes and Cobb, 1959) covers about 1,100 square miles in area and includes the type locality of the Kenai Formation. At least 5,000 feet of nonmarine sandstone, siltstone, claystone, and coal are exposed along Cook Inlet and Kachemak Bay. Structurally, the coal field is a broad basin locally modified by gentle folds and high angle faults. At least thirty coal beds ranging from 3 to 7 feet in thickness as well as thinner beds are exposed along the coastal bluffs and banks of larger streams.

The coal is lignite to subbituminous B and C. Although mining has been attempted since 1880, the total production does not exceed several thousand tons. Large resources are present but due to scarcity of outcrops the inferred reserves were not estimated. The estimated measured reserves for the Homer District are 318.2 million short tons.

The future of the coal mining industry in Alaska is dependent on the growth of industry and population of the state, and the U. S. and world market demand. The demand for heat and power will increase with growth, and as long as the coal industry is competitive as an energy source with oil, gas and hydroelectric power, it can be expected to participate in this growth. The stability and growth of the coal industry will thus largely depend on the relative costs of competitive sources of energy. The most promising plan is to construct large power plants at the mines from which electric power can be transmitted to consumer areas.

Alaska also has large reserves of lignite and subbituminous coal which may be utilized as raw material for a large variety of chemical products as well as the manufacture of synthetic fuels. However, until transport and technological advances reduce total delivered costs of such products, industries cannot be expected to utilize the resources of coal in Alaska for these purposes.

Some of Alaska's coal is of coking quality and further development may create sufficient reserves to interest foreign firms (most likely Japanese) to utilize these resources. The demand for coking coal in Japan is increasing with the expansion of its steel industry.

Phosphate

There are no known occurrences of phosphate in this region.

Sulphur

Potentially commercial deposits of native sulphur occur in Alaska. All the known deposits of native sulphur are situated in a belt of active and quiescent volcanoes that extend throughout the Alaska Peninsula and the Aleutian Islands. Four areas containing sulphur deposits have economic potential; Stepovak Bay on the Alaska Peninsula, Akun Island, Makushin Volcano on Unalaska Island, and Little Sitkin Island. The existence of the deposits has been known since the early exploration by the Russians (Petroff, 1882). It is possible that the existence of the deposits was made known to the Russians by the Natives. Petroff mentions sulphur springs near Morzhavoi near Bechevin Bay, but states that the Natives did not bother to use them for skin diseases.

The native sulphur deposits on the Alaska Peninsula and the Aleutian Islands are all closely associated with volcanic activity. They represent direct precipitation from sulphurous volcanic emanations and the sulphur commonly occurs as crystalline and massive surficial incrustation.

The Stepovak Bay sulphur deposits occur near the crest of the Aleutian Range 7 miles from Stepovak Bay. The sulphur occurs as vug fillings in a porous volcanic breccia which locally contains up to 20 percent sulphur by bulk although the average content is closer to 5 or 10 percent. The sulphur deposit is about 100 feet thick and crops out for about a half-mile along an inaccessible cirque wall which is believed to be the site of an extinct volcanic crater.

The sulphur deposits on Akun Island are located on the upper part of a rugged volcanic ridge. The sulphur occupies an area of 15 to 20 acres, and occurs chiefly as thin crystalline incrustations on the walls of small cavities in a porous earthy zone near the surface. Two samples taken at a depth of 4 feet, and at the surface, contained 22.8 percent and 55.5 percent sulphur, respectively.

The sulphur deposits on Unalaska Island are exposed over an area of 20 to 30 acres in the crater of Makushin Volcano. It occurs in a crust 1 to 2 feet thick which resulted from volcanic vapors rising through the loose porous lavas in the crater floor and depositing the sulphur at the surface. Another zone beneath the crust consists largely of moist, hot, porous, decomposed rock containing finely disseminated sulphur to a depth of at least 16 feet. The sulphur content of the upper 1 or 2 feet of the surficial crust averages about 88 percent, and the crust is estimated to average 60 percent sulphur over 5 acres of the west ground. The sulphur content at depths of 4 to 16 feet below the crust averaged about 23 percent.

On Little Sitkin Island a large deposit of sulphur riddled with active fumaroles occurs on the south side of the breached volcanic crater between 1,500 feet in altitude and the Summit Lake at 2,665 feet in altitude. Relatively pure sulphur covers about 10 acres where it occurs as massive, mammillary aggregates of crystals. Beneath the surface crust sulphur veins and vug linings occur in a white clay product of the volcanic rock. The surface layer is about 10 feet thick and contained about 95.8 percent sulphur.

There are no data to base an estimate of sulphur reserves in the Stepovak Bay deposits. The low sulphur content of the float rock indicates that the deposit has little economic value. Estimates of Akun Island reserves vary from 18,000 to 24,000 tons of refined sulphur. The Makushin Volcano sulphur deposit is estimated to contain 33,000 tons of sulphur, of which 9,000 tons is in material containing 60 percent sulphur and 24,000 tons is in material containing 25 percent sulphur. As much as 200,000 tons of sulphur might be present at the Little Sitkin Island deposit. There is no production from the native sulphur deposits in Alaska.

Geothermal

A geothermal resource is energy which can be generated by the utilization of natural steam. Geothermal areas occur in proximity of localities of recent volcanic activities or where there has been intrusion of igneous rocks, or faulting. In some respects the geologic conditions for a geothermal area are similar to those for an oil field. First, a source of heat is required such as a deep seated intrusive body; second, permeable rocks are necessary for passage of connate and meteoric waters, and third, an impermeable caprock is required to form a trap for the heat reservoir. A bore hole penetrating the heat reservoir will release the super heated water which flashes into steam at the release of pressure. Many thermal springs are warm at the surface but increase in temperature at depth.

Many of the possible geothermal resource areas in Alaska are in the volcanic belt along the Aleutian Island chain and in the Alaska Range. In the Interior of Alaska possible potential areas are associated with thermal springs. The boundaries of areas are broadly defined based on limited geologic evidence. These areas are not in a withdrawn status but are considered prospectively valuable for geothermal resources until such time when sufficient geologic information is available to classify them as potentially valuable.

Geothermal energy is electric energy generated by the utilization of natural steam. The development of this resource should be competitive with the other sources of energy available in Alaska, and its success commensurate with technology to produce low cost electric energy to the consumer.

The areas defined on the maps at the end of the chapter as having geothermal potential have been delineated on the basis of volcanoes, active and inactive, fumaroles and hot springs. In this region the geothermal "hot spots" include Pavlof, Aniakchak, Katmai, Augustine, Redoubt, Iliamna, and Wrangell volcanoes; the hot springs areas delineated include Becharof Lake and an area along Twelve-mile Creek near Kiagna River in the Upper Copper River Basin (Waring, 1917).

Pacific Coast Province

The province extends from Icy Point in southeastern Alaska to Chirikof Island in southwestern Alaska and includes the Gulf of Alaska Region, and part of the Kodiak Region.

There has been much exploration activity in recent years along the Gulf of Alaska because of the petroliferous character of the Tertiary rocks, favorable structure, and proximity of the oil field at Katalla. The area is approximately 40,000 square miles and is underlain by Tertiary rocks which have an aggregate thickness in excess of 25,000 feet. The subprovince extends from Icy Point westward to Chirikof Island, and may extend offshore to the edge of the Continental Shelf. The Tertiary rocks are underlain by highly deformed metamorphosed Mesozoic sedimentary and volcanic rocks that are not considered petroliferous. The older Tertiary sequence of Eocene age is dark marine siltstone about 3,000 feet thick, and is considered the source rock for petroleum. The older rocks are overlain by over 9,300 feet of marine and nonmarine sedimentary rocks of late Eocene and possibly Oligocene age consisting of sandstone, siltstone, shale, and coal. Marine clastic rocks of Miocene to Pleistocene age which exceed 11,500 feet in thickness, rest with local unconformity upon older Tertiary rocks. The Tertiary province is bounded on the north by the Chugach-St. Elias system of high angle reverse faults, and is structurally complex with asymmetric folding, and north dipping high angle thrust faults. Failure in oil exploration is due to lack of detailed structural information in areas of complex structure, and lack of suitable reservoir rocks in favorable structural positions. Since 1954, sixteen deep test wells and five core holes were drilled in this province without success. The only oil production to date has been limited to the eighteen shallow wells which produced on Katalla oil field. However, interest in the offshore areas of the province still remains high.

The Kodiak Tertiary subprovince is composed of rocks similar to those along the Gulf of Alaska and which if deposited in the same basin may extend from Middleton Island to Chirikof Island over an area of approximately 17,000 square miles. The Tertiary rocks are exposed on the east or Pacific side of Kodiak Island, and are bordered in the northwest and possibly underlain by slaty argillite and graywacke of late Mesozoic age. The contact is a high angle fault system similar to and which may be an extension of the Chugach-St. Elias system. The Tertiary rocks are over 8,000 feet thick and represent strata ranging from Oligocene to Pleistocene in age. The rocks are of marine and nonmarine origin and are tightly folded. The petroleum possibilities may lie in the large offshore areas where the rocks are not so structurally complex and may contain adequate reservoir beds. No wells have been drilled in this province to date, but there has been some offshore exploration near the islands south of Kodiak Island.

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Petroleum and Natural Gas

The petroliferous Tertiary sedimentary rocks along the Gulf of Alaska contain many oil and gas seeps, and a small oil field. The abundant oil and gas seeps in the Katalla and Yakataga Districts were first discovered about 1896 and have been an important factor in encouraging oil exploration which resulted in the discovery of the Katalla oil field in 1902. The oil seeps and oil production are from the middle part of the Katalla Formation which locally includes a petroliferous, highly organic shale.

In the Yakataga District the known oil seeps are from the Poul Creek Formation and lower part of the Yakataga Formation of Tertiary age. Nearly all the oil seeps are on or near the crests of faulted anticlines. The anticlines have been breached by erosion and the reservoir sands have lost their oil content through seeps. The oil industry estimates that during the last 10,000 years over 100,000,000 barrels of oil have been lost from this province through seepage to the surface.

Between 1901 and the end of 1963, about 63 wells and 5 core tests have been drilled in this province, and with the exception of the Katalla oil field, all test wells were unsuccessful. Failure seems due to lack of detailed structural and stratigraphic information in areas of complex structure, and the lack of suitable reservoir rocks in favorable structural positions. Nevertheless, the abundant evidence of petroleum makesit possible that suitable commercial deposits will eventually be found. Interest is increasing in oil exploration on the Outer Continental Shelf, and much of the geologic controls must be obtained from onshore investigations.

Oil production in the subprovince has been limited to eighteen shallow wells in a 60 acre tract in the Katalla oil field. From 1902 to 1933, these wells produced about 154,000 barrels of parafin based oil having a gravity of 41-45° Bė. The wells produced oil from a fault zone at depths from 360 to 1,750 feet.

Interest in oil exploration by the industry in this region will continue, but it may be concentrated in the nearshore and offshore shelf areas. The petroliferous Tertiary rocks extend out on the Continental Shelf in the Gulf of Alaska to Middleton Island, a distance of 50 miles. The petroleum possibilities cannot be evaluated accurately, but it is believed that many of the structures present onshore may extend offshore, and that they could provide suitable traps for reservoir beds. These structures are not breached; the presence of suitable reservoir rocks in favorable structural positions is possible.

The earliest available reports on the Katalla area do not indicate the source of the first reports of oil seeps. Martin (1908) states that "the existence of coal and petroleum was probably learned from the Natives". There is no information indicating the use of the seeps by the Natives.

Oil Shale

The Katalla Formation of Tertiary age contains an organic shale member which contains minor amounts of petroleum. A weathered sample collected by the U. S. Geological Survey in 1944 indicated a yield of only 0.8 gallons per ton when analyzed. The unweathered sample should contain more oil. In the Yakataga District evidence of oil seeps from the Poul Creek Formation of Tertiary age indicate the presence of source beds. The potential for oil shale is unknown in this area, and will require additional investigations. The extent of such deposits must be determined and samples must be analyzed to indicate whether the oil yield is sufficient to meet the classification standards of the Geological Survey.

Bituminous Rock

There are no reported occurrences of bituminous rock in this province.

Coal

Coal is widely distributed in this province and is found in the Bering River area, and in the Robinson Mountain area. The Bering River field was discovered by prospectors in 1896. About the same time, prospectors reported the discovery of coal along the front of the Coastal Mountains between Controller Bay and Yakataga. The importance of the Bering River coal field was first recognized in 1901, but it was not until after publication of reports of investigations by the Geological Survey (1904-1908) that the public was aware that this field contained a large quantity of high grade fuel. Practically all of the coal field was covered by claims under the Coal Land Law of 1904. Detailed investigation by the federal government and industry, and some development work continued until 1920. Since that time there has been only sporadic interest shown in the Bering River field. Between 1906 and 1907, a few thousand tons of coal were mined on Bering Lake which was used for railroad construction in that vicinity. This is the only coal production reported from the Bering River coal field.

The coal-bearing rocks are in the Kushtaka Formation of Tertiary age and underlie an area about 50 square miles from Bering Lake northeastward 20 miles to the Chugach Range. The structure of the field is complex. The beds in most of the area are tightly folded, locally overturned and cut by many faults, some of which are thrust faults of large displacement. The intensity of the deformation increases to the northeast.

The coal ranges from low volatile bituminous in the southwest part of the field to semianthracite and anthracite in the eastern part. Analysis of coal indicate that at least part of the bituminous coal is of coking quality. The coal occurs in a large number of beds that show marked changes in thickness within short distances. Almost everywhere, the coal is strongly crushed and sheared.

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No estimates of reserves are available for the field. A large amount of surface and underground prospecting had been done but no commercial mines were developed. A major problem in this area is transportation to a deep water port. Cordova or Katalla are the only ports available, and either port would require the construction of a railroad or road to transport the coal to tidewater. Interest is continuing for the development of the coking coal in the Bering River field. Japanese industrialists are currently financing exploration work in the Carbon Creek area of the field; an available supply of coking coal is necessary to meet the requirements of a rapidly expanding steel industry in Japan. The development of the Bering River coal field is dependent on the number and extent of coal beds which have coking properties, and adequate reserves to sustain long-term production.

Recent studies of the Yakataga District by the Geological Survey indicate the coal field may extend eastward under the Bering Glacier and along the front of the Coastal Mountains to Yakataga. The coal beds in the Kulthieth Formation of Tertiary age are believed to correlate with the Kushtaka Formation near Katalla (Miller, 1957). The geologic investigations were made to determine the oil and gas potential of the Gulf of Alaska Tertiary province. Miller stated the Kulthieth Formation which is exposed in the Robinson Mountains consists of 9,300 feet of nonmarine and marine sandstone and siltstone and many interbeds of high-rank coal. The coal beds range in thickness from a fraction of an inch to about 6 feet and are commonly sheared, although locally, some coal is blocky. The coal beds appear to have the same physical characteristics of those in the Bering River field, most of the coal is low volatile to semianthracite. There are no estimates of the reserves for the Robinson Mountain area because of insufficient data. The boundary of the field is generalized on the basis of the outcrops of the Kulthieth Formation.

Phosphate

There are no reported occurrences of phosphate in this province.

Sulphur

There are no reported occurrences of native sulpher in this province.

Geothermal

The only reported occurrences of hot springs within this region is in the vicinity of Lituya Bay, about 80 miles north of Hoonah (Waring, 1917). A Native guide reported the locality to the Geological Survey, but he had not personally visited the spring.

Southeast Province

This province extends along the Pacific Coast from Dixon Entrance northward to Yakutat Bay and is included in the southeast region of this study. All places containing leasable minerals in this province are indicated on the map (Figure IV - 78).

The geology of the western part of this province has been discussed under the Pacific Coast Province. In the Southeast Province some of the islands such as Heceta, Keku, Admiralty, and Zarembo Islands are underlain by unmetamorphosed Paleozoic and Mesozoic strata, and Tertiary coal bearing rocks which could contain petroleum and gas. There has been no oil exploration in this province, but in areas where coal bearing rocks are folded, the geologic structures might provide suitable traps for methane gas. The Tertiary rocks are estimated to range from 2,000 to 5,000 feet in thickness on Admiralty Island. The province is not well known geologically and the petroleum possibilities of the Paleozoic and Mesozoic rocks depend on the amount of metamorphism and deformation in these older marine rocks, and proximity to large igneous intrusions.

Petroleum and Natural Gas

The Petroleum potential of this area is slight because igneous and metamorphic rocks underlie most of this part of the state. In the vicinity of Heceta Island the possible petroleum bearing strata underlie an area 30 miles long and 10 miles wide, containing approximately 45,000 feet of unmetamorphosed marine sedimentary rock ranging in age from Middle Silurian to Middle Devonian (Miller, 1959). Definite indications of petroleum have not been reported, but potential reservoirs might be found in porous sandstone and reef limestone. The Keku Island and adjacent part of Kupreanof and Kuiu Islands in an area 300 miles square, are underlain by 20,000 feet of moderately deformed marine sedimentary and volcanic rocks of Silurian to Lower Cretaceous age which contain many fetid fossiliferous limestone beds. The petroleum possibilities are based on fossiliferous source beds and the unaltered state of the rocks.

The Tertiary rocks crop out in small areas in the province, but principally between Kootznahov Inlet on southern Admiralty Island and the west side of Zarembo Island; they also overlie part of the Keku Island area. The outcrop belt is 60 miles long and 10 to 15 miles wide, and the principal areas of coal bearing Tertiary rock are less than 10 to 20 feet thick and consist of sandstone, siltstone, shale, conglomerate and some coal beds from a few inches to a few feet thick. If the rocks occur in larger and more structurally favorable bodies the petroleum potential would be more favorable.

Although indicationsof petroleum have been found in the Keku Island area, no attempts have been made to explore the petroleum possibilities of this area. In 1944, prospectors reported to the Geological Survey that they had seen an oil seep in the southwest end of Admiralty Island (Miller, 1959). J. C. Roehm, in an unpublished report of the Territory of Alaska, Department of Mines, 1947, referred to an oil saturated black shale and an oil seep near the southwest end of Admiralty Island and to bituminous matter in limestone of Permian age on the Keku Islands.

So far as known, there has been no petroleum exploration in these areas of limited petroleum potential. Unfavorable factors include the limited size of the areas of unmetamorphosed rocks, synclinal structures, numerous small faults, firm lithification of the rocks, and the fact that the general region has been subjected to severe deformation and intrusion of igneous rocks. The presence of adequate source beds for petroleum is uncertain. The area is not well known geologically and would require additional investigation of the petroleum potential.

Oil Shale

There are no known occurrences of oil shale in this province. The reports of oil seeps and oil saturated shale in the southwest end of Admiralty Island have not been verified by the Geological Survey (Miller, 1959).

Bituminous Rock

There are no known occurrences of bituminous rock in this province.

Coal

Tertiary rock that locally contain coal underlie about 20 square miles of the north and south side of Kootznahoo Inlet, Admiralty Island, about 60 miles south of Juneau. Coal prospects have been open at several localities along the shores and islands in the Inlet (Wright, 1906). At all these locations the coal beds are 2 to 3 feet thick and contain several shale partings. The only extensive development was at the Harkrader Mine where an inclined shaft was driven to a depth of several hundred feet. A small amount of coal was shipped to Juneau prior to 1920. The analysis of samples from the mine indicate the coal is bituminous, but the thinness and poor quality of the beds discouraged further development.

Phosphate

There are no known occurrences of phosphate in this region.

Sulphur

There are no known occurrences of native sulphur in this region.

Geothermal

Hot springs are fairly numerous on the islands that compose a large part of southeastern Alaska, and on the mainland. The principal areas are those on Revillagigedo Island and the adjacent mainland, those along the Stikine River, and those of Baranof and Chichagof Islands. The springs seem related to intrusive masses of rock principally of granitic material, in the schists, graywacke, and other more or less altered rocks of the region, and appear to issue along zones of fracture or faulting in the intrusive rocks (Waring, 1917). For purposes of classification, geothermal areas were broadly defined on the basis of geologic inference. Localities where springs were abundant and the relative structure and the contacts between intrusive and host rocks, were considered as a single geothermal area.

Revillagigedo Island and adjacent mainland--Bell Island hot springs are located at western end of Bell Island about 50 miles north of Ketchikan. The springs are in 5 basins with water temperatures ranging from 125-162°F. Total flow is 82 gallons per minute. Other hot springs 5 miles southeast of Saks Cove on the east side of Behm Canal issue from fissures in fractured granite rock. The Stikine River Shakes hot springs have long been claimed by the Indian Chief Shake who lives in Wrangell. The springs are located about 20 miles northeast of Wrangell on the north side of Stikine River. The water has a temperature of 125°F and flows 100 gallons a minute. In the Wrangell area about four groups of springs are mentioned and of these probably the most notable is within a few miles of the Canadian Border on the east side of the Stikine River. The Geological Survey reports a stream of hot water 10 feet wide formed by eighteen springs which flows at about 800 gallons a minute from the base of a granite mountain. The water temperatures are 120-150°F.

Baranof and Chichagof Island--Baranof hot springs are located at the head of Warm Springs Bay. The water temperatures range from 113-118°F. The flow is from nine springs at 78 gallons a minute. Sitka hot springs which lie 16 miles south of Sitka on the coast consist of four springs ranging in temperatures from 54-153°F. The water has a sulphur content and is used by Native and white people. Hot springs are located at Gut Bay on the east coast of Baranof Island, and at Fish Bay 40 miles north of Sitka have a high hydrogen sulphide content. The Fish Bay hot springs were known to the Indians. Hot springs at Peril Strait (Hoonah Sound) issue from three springs which have a water temperature of 101°F, and a total flow rate of 32 gallons a minute. The Tenakee hot springs on the north shore of Tenakee Inlet, Chichagof Island, consist of ten springs with a flow rate of about 23 gallons a minute. The water temperature ranges from 45-106°F in the various springs. Other springs occur at the head of Tenakee Inlet which have a flow rate of 4 gallons a minute and a water temperature of 179°F. Hot springs are also reported near Nika Bay, Mud Bay, and on the north shore of Lisianski Inlet. Most of the hot spring localities were reported to early explorers by the Native people who probably have established prior usage.

Upper Yukon-Porcupine Province

The Yukon-Porcupine area and Yukon Flats were previously treated as two separate geological entities on the assumption that the Yukon Flats were underlain by a single broad structural basin containing a thick sequence of Cenozoic sediments (Miller, Payne, and Cryc, 1959). More recent aeromagnetic work indicates that the Yukon Flats are underlain at shallow depth by various types of Paleozoic and possibly Mesozoic rocks which are exposed south and east of the Yukon Flats, and that, while the Yukon Flats are a single physiographic unit, the rocks underlying the thin Quaternary alluvial cover belong to more than one geologic province (Senate report, 1964). The province discussed here is identical in boundary with the similarly designated region used elsewhere in the report.

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Petroleum and Natural Gas

There are no known oil seeps within the region. However, the Triassic rocks contain a considerable thickness of oil shale, and the Mississippian rocks in the Paleozoic sequence includes beds of bituminous limestone and shale. The structure of the unmetamorphosed sedimentary rocks of Paleozoic and Mesozoic age in the eastern part of the region is relatively simple with broad, open folds, upon which is superimposed minor folding and local crushing and shearing. The Cretaceous rocks of the Kandid Basin do not have favorable reservoir characteristics, but the underlying Paleozoic rocks should be within reach of the drill, as is evidenced by local exposures of Paleozoics along anticlinal axes in the basin. Due to the relatively simple structure of the Kandik Basin and the unmetamorphosed condition of the Paleozoic rocks, this has long been considered a favorable area for the occurrence of oil and gas in the Paleozoic rocks of central Alaska. Only the northeastern part of the Yukon Flats is considered as having petroleum possibilities.

Cretaceous and Tertiary nonmarine coal bearing rocks crop out in several small areas around the edges of the Yukon Flats, and there probably are similar occurrences beneath the Quaternary deposits of the flats which might furnish a small local supply of dry gas.

The Yukon-Porcupine and Yukon Flats region has been of interest to oil companies, as evidenced by leasing activity and geophysical and surface mapping, but to date, no wells have been drilled (Senate report, 1964).

Coal

The coal bearing rocks of the Tintina Basin occur in a belt 2-10 miles wide southwest of the Yukon River. Coal has been reported at several localities within this belt, but little work has been done to evaluate the deposits. Sections measured at one locality on Washington Creek, include at least 5 coal beds containing 4 or more feet of clean coal. The rank of the coal is thought to be subbituminous.

An isolated occurrence of coal of possible Paleozoic age occurs on the Nation River near its junction with the Yukon. The coal appears to be in the Nation River Formation and is reported to be bituminous coking coal. The coal is not well defined as it appears to be in a fault zone.

Coal bearing rocks are exposed for several miles along the Yukon River in the Rampart Trough. The only detailed description of this coal is at the Drew Mine on the west bank of the Yukon about 25 miles above Rampart, where 38 inches of coal occur in a 19-foot coaly section (Collier, 1903).

Two other small isolated occurrences of coal within the Rampart historic area are on Coal Creek, tributary of the Dall River, about 70 miles above its junction with the Yukon, and at Chicken on the Forty-mile River. Both of these occurrences are of probably Tertiary age (Barnes, 1967).

Production of coal from the region has been limited. About 2,000 tons were mined at the Nation River occurrence of possible Paleozoic coal. Something over 1,000 tons of Tertiary coal were mined at the Drew Mine, about 25 miles above Rampart on the west bank of the Yukon. The coal from both localities was used in river steamers. Both mines were apparently abandoned prior to 1902.

Oil Shale

Oil shale is contained in Upper Triassic rocks exposed on both sides of the Yukon at the mouth of the Nation River, and on Trout Creek, which enters the Yukon about six miles above Nation River. A sample of oil shale from Trout Creek was found to yield 28 gallons of crude oil per ton. No attempts have been made to determine the extent of oil shale or to develop it (Mertie, 1937; Brabb and Churkin, 1964).

Phosphate

Phosphate occurs in the Hillard limestone of Middle to Upper Cambrian age which is exposed between the Yukon River and the International Boundary in the Tatonduk River area north of Eagle. The phosphate occurs in the form of chips, pellets and finely disseminated material in the matrix of a limestone boulder conglomerate unit (Brabb, 1967). The deposit has not been evaluated or developed.

Geothermal

Hot springs occur or have been reported at eight localities in the Yukon-Tanana Upland. These are: Manley Hot Springs, Circle Hot Springs, Hutlinana Hot Springs, Chena Hot Springs and hot springs reported near Little Minook Creek south of Rampart, near the Tolovana River, on Big Windy Creek southeast of Circle Hot Springs, and near Flat Creek, a tributary of Charley River. A ninth hot springs is on the Ray River northeast of the Yukon River near Rampart. Most of the hot springs appear to be associated with granitic intrusive bodies in the metamorphic terrain of the Yukon-Tanana Upland (Waring, 1917).

Of the nine hot springs enumerated, Circle, Chena and Manley have been developed for bathing resorts as well as for cultivation of vegetables. The Hutlinana and Ray River springs have been used occasionally by prospectors for both these purposes. No attempt has been made to develop any of the hot springs for the production of geothermal energy (Waring, 1917).

Other Leasable Minerals

No occurrences of sulphur or bituminous rock which could be of any commercial significance are known to occur in the region. Paleozoic bituminous limestones are of interest as possible source beds or indications of petroleum. A small amount of sulphur is reported to be deposited at Chena Hot Springs (Waring, 1917).

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Yukon-Koyukuk-Kuskokwim Province

This province is defined primarily on the basis of distribution of unmetamorphosed Middle Cretaceous sedimentary rocks with petroleum possibilities. This is a convenient subdivision for a discussion of oil shale, coal, and phosphate as well, because these leasable minerals are usually also associated with unmetamorphosed sedimentary rocks.

The Yukon-Koyukuk-Kuskokwim Province includes two study regions: the Koyukuk-Lower Yukon and the Southwest Coastal Lowland.

On the basis of petroleum possibilities, this province can be divided into several subdivisions. These are the Yukon-Kuskokwim Lowland, corresponding generally to the physiographic province of the same name; the Koyukuk Flats, again corresponding to that physiographic province; the Melozitna subprovince, in the area of the Indian River Upland; and part of the Lower Yukon subprovince including part of the Nulato Hills.

The Lower Yukon Basin extends in a 100-mile-wide belt from the Yukon-Kuskokwim Delta toward the Selawik Hills, encompassing an area of 30,000 square miles. The basin is underlain predominantly by Cretaceous sediments, but also includes large areas of volcanic and intrusive rocks. The basin is transected by the Kaltag Fault, which extends from Kaltag to Unalakleet, and divides the basin into two areas of diverse geologic character.

The Cretaceous rocks north of the fault consist of two sequences similar to those of the Kobuk Basin, with an older unit of mudstone and graywacke and a younger unit of marine and nonmarine sandstone, conglomerate, shale, and coal. The younger unit is estimated to be several thousand feet thick in exposures along the Yukon. The thickness of the older unit is not known, but aeromagnetic profiles of this part of the basin indicate a depth of 15,000 to 25,000 feet, suggesting a thickness of as much as 20,000 feet for the older sequence. A deep oil test well near Nulato started in the younger unit and passed into the mudstone and graywacke within a few thousand feet, and bottomed in these rocks at 12,000 feet. The structure of the Cretaceous rocks in the western two-thirds of the basin is extremely complex. Unfaulted anticlines are rare or absent. In the eastern part of the basin, broad open folds occur along a narrow belt between Nulato and the lower Kateel River.

South of the Kaltag Fault, the Cretaceous sediments have extensively intruded by a variety of small plutons and are interbedded with extensive volcanic rocks. Up to 50 percent of this part of the basin may be underlain by igneous rocks. The thickness of Cretaceous sediments is thought to be considerably smaller than in the part of the basin north of the Kaltag Fault. Much of the section consists of interfingering marine and nonmarine rocks. Coal occurs locally along the east side of the basin and in this area some of the sandstone have favorable reservoir characteristics. However, tight folding and extensive faulting casts some doubt on the petroleum possibilities.

The Melozitna Basin Subprovince is an area of Cretaceous rocks extending northeastward from the Yukon River along the Melozitna and Upper Dubli River drainages. The geology of the Melozitna Basin is not well known. Exposures along the Yukon indicate a Cretaceous section similar to the Kobuk and Lower Yukon Basins, with a larger unit of graywacke and mudstone and an upper unit of shallow marine and nonmarine sandstone, conglomerate, shale, and coal. As in the Lower Yukon Basin, south of the Kaltag Fault, the structure is complex and there are many small intrusive bodies in the basin and volcanics interbedded with the Cretaceous sediments.

Aeromagnetic profiles over the Koyukuk Flats indicate the presence, at no great depth, of highly magnetic rocks. Surface mapping in and around the flats confirms this, indicating that the Quaternary alluvial deposits are underlain chiefly by volcanics and intrusive rocks with possibly some infolded Cretaceous sediments.

Aeromagnetic data indicate that the Cretaceous sediments of the Lower Yukon Basin extends beneath the Yukon-Kuskokwim Lowland. A structural high of pre-Mesozoic volcanics and graywacke are exposed along the Yukon between Marshall and Russian Mission and appear to continue beneath the alluvium and split the Cretaceous Basin into two parts.

Petroleum and Natural Gas

Although the Yukon-Koyukuk-Kuskokwim Province has not been intensively explored to date, exploration has not been encouraging with respect to oil and gas possibilities.

The petroleum possibilities of the Lower Yukon Basin north of the Kaltag Fault are limited due to the complex structure in the Cretaceous rocks and to the unfavorable reservoir characteristics of the bulk of the sediments (lower unit). Some of the clean sands in the upper unit may have favorable characteristics, but the upper unit appears to be thin or absent on most of the simple anticlinal structures. Oil seeps have been reported in the area, but none of these have been verified. The 12,000-foot test well near Nulato contained no shows of oil or gas. South of the Kaltag Fault, petroleum possibilities are poor, but only because of the widespread occurrence of intrusive and extrusive igneous rocks.

The Melozitna Basin is unfavorable for much the same reasons as the Lower Yukon Basin south of the Kaltag Fault. In addition to complex structure and occurrence of igneous rocks, is the small size of the basin.

The Koyukuk Flats, as discussed above, appear to be underlain mostly by intrusive and extrusive igneous rocks.

The Yukon-Kuskokwim Lowland has been the object of some lease activity and geological and geophysical exploration by oil companies. Between 1959 and 1961, three core holes (1,205', 1,423', 2,140') and a deep test well (14,910 feet) were drilled at Napatuk Creek about 50 miles

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southwest of Bethel. The results of the wells and geophysical investigations have apparently not been encouraging, as there has been very little interest shown in the area since the wells were drilled.

Coal

Coal occurs at a number of localities throughout the Yukon-Koyukuk-Kuskokwim Province. In addition to occurrences within the region as defined above, there are isolated occurrences in adjacent areas of predominantly metamorphic and igneous rocks.

An occurrence of a coal bed 9-10 feet thick on the middle fork of the Koyukuk River has been reported. This is apparently in an eastward extension of the coal bearing rocks of the Kobuk Basin (Barnes, 1967).

Coal occurs along the Yukon at several places between Ruby and Anvik. The coal occurs in the Late Cretaceous Kaltag Formation. The coal beds range from 6 inches to 3-1/4 feet in thickness. Some coal from these localities was used prior to 1903 for river steamboats (Barnes, 1967).

Coal has been reported on the Anvik River about 100 miles above its mouth, including one 10-foot bed (Harrington, 1918). Collier (1903) states that this coal had found limited use among the Natives in the manufacture of black paint. Cretaceous coal has also been reported near Poorman and Flat. It was apparently used to a very limited extent by prospectors or miners at Iditarod, and the deposits are thought to be of small extent.

Coal bearing rocks have been reported at two localities on Nelson Island and at one on Nunivak Island. The coal on Nelson Island is probably of Cretaceous age and of bituminous rank. The beds are less than 2 feet thick. Coal in beds about 2 feet thick are reported on the north shore of Nunivak Island. Apparently no use has been made of the coal from these three localities.

Geothermal

Nine hot or warm springs are known or have been reported in the Yukon-Koyukuk-Kuskokwim Province or in adjacent areas of crystalline rock. These include Melozitna Hot Springs, Little Melozitna Hot Springs, Horner Hot Springs, warm springs near Reed and Alatna Rivers, hot springs on a tributary of the Innoko River, near the Tuluksak River, near Whitefish Lake, and warm springs near Iditarod.

Melozitna Hot Springs are on a tributary of the Melozitna River, about 10 miles from that river, and about 16 miles north of the Yukon at Kokrines. Waring (1917) states that the springs were developed for bathing and used by both whites and Natives during the winter. No available knowledge is available regarding the discovery or first use of the springs.

Little Melozitna Hot Springs are on a tributary about 2-1/2 miles from the Little Melozitna River, about 40 miles northwest of Tanana. The springs have been developed only to the extent of a log curbed bathing pool (Waring, 1917).

Horner Hot Springs are about three-quarters of a mile from the Yukon River, 5 miles below Kokrines. They were shown to F. G. Horner by an Indian. Horner built a small cabin and planted a garden near the springs.

The warm springs on the Alatna River were first reported by C. E. Giffin of the U. S. Geological Survey, and apparently have not been used.

Stoney (1900) reports a warm springs near the Reed River, and states that the Natives claim the temperature of the springs varies, sometimes being so hot that they could cook meat in it.

The hot springs near the Innoko River are only reported occurrences and no details are known as to their character or use.

The warm springs near Iditarod are reported to remain open throughout the winter, but no development or use is reported.

A hot springs is reported on a tributary of Ophir Creek which flows into Whitefish Lake. It has been used for bathing by prospectors and Lapp reindeer herders.

A hot springs near the Tuluksak River, also near Whitefish Lake is reported, but no mention is made of any development of utilization.

No attempt has been made to study or develop any of the hot spring areas described for the production of geothermal energy.

Other Leasable Minerals

There are no known or reported occurrences of phosphate, oil shale, or sulphur in the Yukon-Koyukuk-Kuskokwim Province.

Bering Strait Province

The Seward Peninsula provides central focus for this province. It is underlain by metamorphic rocks which have been cut by granitic intrusive rocks. This type of geologic terrane generally precludes the presence of leasable minerals. However, there are several small areas of coal-bearing rocks and a number of hot springs which may be of possible value for geothermal energy production.

The Bering Straits Province used for this discussion coincides with the Bering Straits Region cited elsewhere in this report.

This province includes some petroleum possibilities. Included are parts of the Kobuk-Selawik Lowland, Pah River Section, Kanuti Flats, Nulato Hills, Buckland River Lowland, and the Ambler-Chandalar Ridge and Lowland province, and the Selawik Lowland, which extends west from the Kobuk-Selawik Lowland to include the northern part of the Seward Peninsula and Kotzebue Sound.

The Kobuk Basin subprovince covers about 1,000 square miles between Kotzebue Sound and the upper Koyukuk River (Senate report, 1964). Only the rough outlines of the geology of the basin are known. Sediments in the basin are thought to be mid-Cretaceous in age and to consist of two sequences. The older sequence consists of poorly, sorty, dirty, dark marine graywacke and mudstone, which appears to grade upward into a younger sequence of cleaner, shallow water marine and nonmarine sandstone, conglomerate, shale, and coal. The younger rocks crop out principally along the north edge of the basin (Ambler-Chandalar Ridge and Lowland Physiographic Section) where they apparently overlap the older sequence and rest directly on Paleozoic rocks of the Brooks Range. The total thickness of the Cretaceous rocks is not known, but along the Kobuk River it is at least 5,000 feet and probably is much greater. The Cretaceous beds are tightly folded except locally along the north edge of the basin where some broad open folds occur. Because of the complex structure of most of the rocks in the basin, and the impermeable character of the lower sequences of Cretaceous rocks, the petroleum possibilities of the basin are considered doubtful. In the extreme northern part of the basin, in the zone of intertonguing marine and nonmarine beds, clean sandstones with favorable reservoir characteristics may occur. Another possibility is suggested by regional studies in the Brooks Range which indicate that the metamorphic grade of the Paleozoic rocks decreases abruptly to the south, and that the Paleozoics underlying the Cretaceous sediments may have some petroleum possibilities.

Aeromagnetic profiles across the Selawik Lowland indicate that the eastern part, between the Waring Mountains and the Selawik Hills, is underlain at shallow depth by igneous rocks. Profiles across the northern part of the Seward Peninsula in the Cape Espenberg area indicate the possibility of a considerable thickness of Tertiary or Cretaceous sediments beneath the alluvium, which may extend northward beneath Kotzebue Sound.

An aeromagnetic profile across Norton Sound from Unalakleet to Cape Darby indicates that the Lower Yukon Cretaceous Basin extends offshore into the Sound for about 15 miles. Beyond this limit, the profile indicates the Sound is underlain by either Mesozoic volcanic rocks or the Seward Peninsula metamorphic complex, or both.

Petroleum and Natural Gas

Only the extreme northern part of the Kobuk Basin has favorable reservoir beds and relatively simple structures in the Cretaceous rocks. There is insufficient data available to evaluate the petroleum possibilities of the Paleozoic rocks underlying the Cretaceous.

The only part of the Selawik Lowland which could conceivably have petroleum possibilities is the Cape Espenberg coastal area on the north side of the Seward Peninsula and the adjoining Kotzebue Sound embayment.

The eastern part of the Norton Sound is apparently underlain by an extension of the Lower Yukon Basin and presumably the petroleum possibilities are similar to that basin.

Coal

Coal bearing rocks have been reported on the Seward Peninsula in the valleys of the Sinuk, Koyuk and Kugruk Rivers (Barnes, 1967). The most significant of these is the deposits on the Kugruk River, near Candle where coal beds have been opened on the river about 4 miles south of Chicago Creek and on Chicago Creek about a mile above its mouth. The coal was discovered and developed by prospectors and used in the development of Candle Creek placers.

Coal occurs on Coal Creek, a tributary of the Sinuk River, about 14 miles from the coast. Eskimos from the village at the mouth of the Sinuk first showed the deposit to prospectors prior to 1902. The coal occurs in thin beds from 3-16 inches in thickness. There is no report that the Eskimos had used the coal before bringing it to the attention of the prospectors (Collier and others, 1908).

The other coal localities on the Seward Peninsula are not commercially significant.

Coal-bearing rocks of probable Late Cretaceous age occur at scattered localities along the Kobuk River. The westernmost locality is between Trinity Creek and Kallarichuk River, northeast of Kiana, where several thin beds, only a few of which are as much as 2 feet thick, are exposed. Other reported localities in the Kobuk drainage are on the Hunt, lower Ambler and Kogoluktuk Rivers, and in the Lockwood Hills near the Pah River. The coal near Kiana was mined for use in nearby placer gold fields. The rank is bituminous and subbituminous (Barnes, 1967).

Lignitic coal is reported at two localities near Unalakleet, about 10 miles south of the village on Norton Sound, and on the Unalakleet River about 40 miles above its mouth. A small amount of coal has been taken from this locality, but no information is available regarding by whom and for what purpose the coal was taken.

Geothermal

Hot or warm springs occur at five localities on the Seward Peninsula. These are Arctic or Serpentine Hot Springs, Kruzgamepa Hot Springs, warm springs near Inmachuk River, and hot springs near Kwiniuk Creek and near Sweepstake Creek. Additionally, hot springs are reported near the Selawick River. All of the springs are apparently related to granitic intrusives into older sedimentary or metamorphic rocks (Waring, 1917).

Arctic or Serpentine Hot Springs are on Hot Springs Creek, a tributary of the Serpentine River which drains the northwest side of the Seward Peninsula. The springs were apparently discovered and utilized by prospectors prior to 1901, for bathing and for growing vegetables.

Kruzgamepa Hot Springs are on Kruzgamepa River, a tributary of the Nome River. The area was homesteaded some years prior to 1908, and was developed both for the raising of vegetables and as a bathing resort. Because the springs were within 8 miles of the Seward Peninsula Railway, the transportation of produce and bathers to and from Nome and other mining centers was facilitated. There is no record of use of the springs prior to the homesteading.

The warm springs near the upper course of Inmachuk River have apparently not been used for any particular purpose.

Waring (1917, p.77) states that the hot springs near the Kwiniuk River, which flows into Norton Bay, and those on Sweepstake Creek, a tributary of the Koyuk River, are not well known and have not been developed or improved.

The hot springs near the Selawick River are only reported occurrences and no details are known as to their character or use.

Other Leasable Minerals

No occurrences of oil shale, bituminous rock, sulphur or phosphate are known on the Peninsula.

Central Alaska Lowlands Province

Between the metamorphic and igneous complexes of the Alaska Range on the south and the Yukon-Tanana Upland and Kuskokwim Mountains on the north, is an arcuate belt of lowlands, parts of which have been considered for petroleum possibilities.

This province includes parts of the Tanana and Upper Kuskokwim Regions of this study.

More specifically, the province includes the Tanana-Kuskokwim Lowland, Northway-Tanacross Lowland and part of the Northern Foothills of the Alaska Range physiographic divisions (Wahrhaftig, 1965).

The Tanana-Kuskokwim Lowland is separated into two subdivisions, the Tanana and the Kuskokwim Lowlands, respectively, on the basis of the probable depth of the basins. Aeromagnetic profiles across the Kuskokwim Basin indicate that the Quaternary alluvium of the basin is not thick and that the rocks underlying the alluvium are similar to the metamorphosed Paleozoic and intrusive rocks exposed north and south of the basin.

The Tanana Lowland is underlain by thick Quaternary deposits 750 to 1,800 feet, over an area of 6,000 to 7,000 square miles. At most places, the Tanana Lowland is bordered by metamorphic and igneous rocks of Precambrian to Cretaceous age. However, along the southern margin, the lowland is at many places bordered and underlain by coal bearing rocks and nonmarine gravels of Tertiary age.

Thick deposits of Tertiary nonmarine rocks may underlie parts of the Tanana Lowland. In the western part, between Minto Flats and the Alaska Range west of the Nenana River, gravity surveys suggest a thickness of as much as 5,000 feet of Tertiary rocks. A slim hole drilled in 1966 in this part of the lowland penetrated nonmarine Tertiary rocks to a depth of 3,000 feet.

Scattered outcrops of pre-Tertiary basement rock protrude through the Quaternary alluvium of the central part of the Tanana Lowland. An aeromagnetic survey indicates that these rocks are present at shallow depth over much of the area south of Fairbanks.

In the eastern part of the Tanana Lowland, the lack of basement outcrops and the presence of nonmarine Tertiary rocks along the southern edge suggest that this part of the basin may be underlain in places by Tertiary nonmarine rocks.

The Northway-Tanacross Lowland is underlain by thick Quaternary glacial, alluvial, swamp, and lake deposits. The rocks outcropping at the margins of the lowland are metamorphosed rocks of Precambrian and Paleozoic age which have been intruded by a variety of granitic rocks. There is no evidence that the lowland is underlain at depth by Tertiary nonmarine rocks as in the Tanana Lowland to the west. Two water wells (200 and 350 feet deep) encountered small flows of swamp gas.

Metamorphic and granitic intrusive rocks make the ridges in the Northern Foothills of the Alaska Range, while the lowlands are underlain by coal bearing Tertiary rocks. The Nenana gravel at the top of the Tertiary section forms cuestas and ridges where dips exceed 20° and broad plateaus where it is flat-lying.

Petroleum and Natural Gas

The petroleum potential of the Central Alaska Lowlands Province is believed limited to the possibility of dry gas derived from the coal bearing Tertiary rocks which are thought to underlie the Quaternary surficial deposits in parts of the lowland area. Only the western part of the Tanana Lowland is considered likely to contain a large enough mass of the coal bearing rocks to constitute a source for commercial quantities of gas.

Coal

Commercial quantities of coal are present in the coal bearing Tertiary rocks of the Northern Foothills of the Alaska Range. The Nenana Coal Field is one of the two producing fields in Alaska. It extends in a discontinuous belt from the Wood River Basin on the east to the Kantishna River on the west, and ranges in width from less than one mile to more than 30 miles. The coal bearing rocks have been folded and faulted into a series of basins. In the intervening areas, the coal bearing rocks have been eroded away or covered by younger Tertiary and Quaternary deposits.

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Coal beds range up to 60 feet in thickness. Total reserves in the Nenana Field are estimated at nearly 7 billion tons. The rank of the coal is subbituminous.

Coal has been known in the Nenana area since 1898, and the first production was from a mine west of the Nenana River at Healy in 1920. This mine operated until 1922. Subsequent production has been mainly from Healy Creek beginning in 1944 and continuing to the present time (Wahrhaftig, 1951).

The Jarvis Creek Coal Field is an eastern extension of the Nenana Coal Field located at the foot of the Alaska Range, a few miles east of the Delta River. Estimated reserves are 76.5 million tons and the coal is subbituminous.

A Tertiary coal field which does not fall within the region as defined above, is the Broad Pass Coal Field, which occurs in a small basin in the Alaska Range proper. Reserves are estimated at 63.9 million tons, and the rank is subbituminous and lignite.

Other Leasable Minerals

Two warm springs near Glacier in the upper Kantishna River area have been reported. Few details are available except that there are areas in which water remains unfrozen throughout the winter (Waring, 1917).

There are no known occurrences of oil shale, phosphate, or sulphur in the Central Alaska Lowlands Province.

Arctic Slope Province

The Arctic Slope Province of this discussion coincides with the Arctic Slope Region of this study.

Included in this region are several physiographic provinces, namely the Arctic Mountains, the Arctic Foothills and the Arctic Coastal Plain (Wahrhaftig, 1965).

The geology and discussion of petroleum resources of northern Alaska is based primarily on the work of geologists who participated in the Navy Department oil exploration program in Naval Petroleum Reserve No. 4 (NPR-4) and adjacent areas. The Brooks Range is a continuous chain of mountains composed of Paleozoic rocks; the southern half of the Brooks Range consists chiefly of Middle to Upper Devonian strata that are metamorphosed and intruded by large granite masses. These rocks are not considered petroliferous. The northern half of the Brooks Range is composed of sedimentary rocks which range from Upper Devonian to Triassic in age and although structurally complex, the rocks are not metamorphosed and may be potentially favorable for petroleum. In the western and central part of the range, the rocks are broken by imbricate thrust faulting which has thrust the Paleozoic strata over Mesozoic rocks in the Foothills. Strata of the Mississippian Lisburne group are continuously exposed along the front of the range, and repeated by faulting. The limestone sequence is nearly 5,000 feet thick, and petroliferous, and would offer the greatest petroleum potential if present in the subsurface. There has been very little oil exploration activity in the Brooks Range to date.

The Arctic Foothills subprovince forms a wide belt immediately north of the Brooks Range. The subprovince widens to the west. The southern foothills 10 to 40 miles wide, are completely folded and faulted, and the structure is dominated by folded thrust sheets of Mesozoic strata which are thrust northward over Paleozoic limestone. Most of the rocks in the foothills are Jurassic and Early Cretaceous graywacke and mudstone. Older rocks crop out along the flank of the mountains in fault blocks and thrust fault slivers. West of the Anaktuvuk River, small bodies of mafic volcanic rocks are associated with pre-Cretaceous strata. The southern foothills are generally unfavorable for accumulation of petroleum because of faulting, and the poor sorting characteristics and impermeability of the Mesozoic strata. Oil shales are found in the Triassic Shublik Formation, and in strata of Jurassic or Cretaceous age. None of these deposits has been evaluated and the commercial aspects are not known. No wells have been drilled and very little geophysical work has been accomplished in the southern part of the province.

The northern foothills comprise a 30 to 80 mile-wide belt in the western and central parts of the Arctic Slope and narrows to 10 miles in width toward the east. This subprovince is underlain by a Middle Cretaceous and Late Cretaceous sequence of conglomerate, sandstone, shale, and coal which thickens from 6,000 feet in the east to nearly 20,000 feet in the west. The strata are predominately nonmarine in the south and grade northward into marine beds with a progressive overlap of younger nonmarine strata. The structure is characterized by broad open folds with many of the folds asymmetric with steep north flanks, and often broken by high angle faults. Most of the exploration activity from 1954 to the present has been in this province with the consequent discovery of several oil fields and gas fields, largely in the NPR-4.

Shows of oil and gas occurred in nearly all the test wells. Recent exploration resulted in the discovery of the East Umiat gas field on the Umiat structure, and a noncommercial gas field on the east end of the Gubik structure.

The Arctic Coastal Plain is a featureless plain which extends from the foothills to the Arctic Ocean. The NPR-4 has been extensively explored by geological and seismic parties and much information is now available. The Cretaceous marine and nonmarine strata underlying the Quaternary deposits, thin northward from 11,000 feet where exposed in the foothills to about 2,000 feet on the Point Barrow structural high. These clastic rocks successively overlap steeply dipping strata of pre-Mississippian age. The bulk of the Cretaceous rocks are impermeable with poor reservoir characteristics. In the Point Barrow area, strata of Jurassic age are gas productive. Paleozoiclimestone comparable to those in the Brooks Range were not evident in the test wells. About 1,000 feet of steeply dipping Paleozoicsandstone, siltstone, claystone, and conglomerate cemented with silica were penetrated in the Topagoruk test well No. 1. The Mesozoic sedimentary rocks lie unconformably upon Paleozoic rocks and are relatively flat-lying beneath the coastal plain, and it is believed that oil and gas fields will occur in stratigraphic traps, such as overlaps and pinchouts around basement highs rather than structural traps.

There is considerable interest in the petroleum possibilities in nonmarine and marine sequence of Tertiary rocks east of the Colville River. Currently, one well is drilling which in tests is commercially oil and gas productive and another is preparing to drill in this area. Both are proposed deep tests to Paleozoic rocks. Continued oil exploration on the North Slope is indicative that the major companies regard the petroleum possibilities highly attractive.

Petroleum and Natural Gas

Geologic exploration in northern Alaska was started by the Geological Survey in 1901 as part of the systematic exploration of the Territory. In 1901, Schrader (1904) crossed the Brooks Range and mapped the geology along the Anaktuvuk and lower Colville Rivers. In 1904, Collier (1906) mapped the geology along the west coast from Cape Thompson to Cape Beaufort and in 1908, Kindle re-examined the Cape Lisburne area. In 1906 to 1914, Leffingwell (1919) made extensive geologic and geographic studies in the Conning River Region. These geologic studies first pointed out the petroleum potential of northern Alaska.

President Harding issued an Executive Order in February 1923, reserving an area of 37,000 square miles in northern Alaska as Petroleum Reserve No. 4. The Geological Survey conducted investigations in the Reserve from 1923 to 1926, and the reports included information on structure and possible source beds and reservoir rocks. In 1944, the Naval Department began the exploration program in the Reserve, and the geologists of the Geological Survey were asked to carry out the geologic phases of this program. Since 1945, geologic mapping in nearly all of the Reserve and most of the adjoining areas has been completed.

In most oil exploration programs in remote areas, the procedure is to complete geologic and geophysical studies before drilling is started. In NPR-4, since only broad reconnaissance geologic studies were available, it was decided to start drilling at the beginning of the program. The first test wells drilled were in the Umiat and Simpson areas, and both were located near known oil seeps. Umiat test well 1 was a dry hole, but test wells 2 and 3 tested some oil. The Umiat field was discovered 5 years later; the discovery well was completed July 29, 1950. The oil reserve estimates for the Umiat field ranged from 30 million to over 100 million barrels.

The Simpson core test well 1 was completed in June 1945, and the last core test well 31 was completed in 1950; the depth of core tests ranged from 150 to 1,500 feet. Two flowing wells were discovered, and the oil reserves for the Simpson oil field were estimated at 2-1/2 million barrels.

A test well drilling at the site of the Fish Creek oil seep was completed September 4, 1949 at 7,020 feet. Heavy oil that has an asphalt base 13-14° API gravity was discovered between 2,915 and 3,020 feet in sandstone of Upper Cretaceous age. The reserves were small and it is believed the accumulation of oil occurred in a stratigraphic, rather than structural trap.

By 1946, geophysical studies indicated the presence of a major basement high in the Barrow area. Four tests were drilled between 1948 to 1950, and South Barrow test well 2 was completed on April 15, 1949, as a producing gas well. Wells 1 and 3 were dry holes and wells 4 and 5 were producing wells and served as a standby gas well at the Point Barrow Base. Since 1950, a number of wells were drilled at Barrow to supply the heating requirements of Barrow village. The gas production was from reservoir rocks of Late Jurassic or Early Cretaceous age. The gas reserve of the Barrow field was estimated at about 10 billion.

The Gubik anticline was mapped by geologic field parties in 1945 and 1947, and in 1950 a detailed siesmic survey was made to delineate the structure. Gubik test well 1 was completed August 11, 1951, as a gas well in sandstone of Late Cretaceous age at depth from 890 to 1,750 feet and from 3,500 to 3,700 feet. Gas in commercial quantities is believed to be present in the structure. The gas reserves for the Gubik gas field was estimated at 222,000 million cubic feet.

By 1950, geophysical and geological studies had covered most of the Coastal Plain area, and two closed structures, Meade and Kaolak, were mapped. The Meade test well 1 was completed on August 21, 1950, at a depth of 5,305 feet and traces of oil and gas were found. The Kaolak test well 1 was completed Novemember 21, 1951, at a depth of 6,953 feet, and traces of oil were found. Both wells bottomed in Cretaceous rocks.

As a result of the Navy Department progress and earlier geologic studies, 37 test wells and 45 core tests with a total footage of 175,000 feet were drilled on 18 structures in the years 1945 through 1955. Three oil fields (Umiat, Simpson, and Fish Creek), two gas fields (South Barrow and Gubik), and at least two other prospective gas fields were discovered. Total reserve estimates for all discoveries of oil range from 30 to 100 million barrels, and for the gas fields from 370 to 900 billion cubic feet.

Oil exploration east of the Colville River and the Naval Petroleum Reserve No. 4 boundary is currently being conducted by Industry. As a result of the exploratory drilling, one gas discovery was made on the Umiat anticline east of the Colville River. The East Umiat No. 1 gas well flowed 1,500 to 6,000 million cubic feet of gas between 2,005 and 2,054 feet from gas productive zonesin rocks of Upper Cretaceous age. The gas well is shut-in pending a market.

The Prudhoe Bay oil discovery in 1968 by a major oil company has again stimulated interest in exploratory drilling on the North Slope. The test well is reported to flow 1,150 barrels of oil per day from oil productive carbonate rocks at about 9,000 feet depth. It is also reported to be gas productive from sandstone of Permian-Triassic age.

All other wells drilled by the industry on the Arctic Slope failed to find commercial oil or gas deposits. However, the number of exploratory test wells drilled are rather insignificant for a thorough evaluation for the entire area. The fact that oil and gas production in significant amounts is encountered in rocks of Paleozoic age, such as in the Prudhoe

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Bay test well, has increased the possibility for more oil discoveries along a major basement high, such as the Barrow high which flanks the Colville Basin. The older rocks are within drilling depth along this large structural feature which has potential for many large stratigraphic traps.

Oil Shale

Deposits of oil shale were first reported in Alaska north of the Arctic Circle in the latter part of the 19th century. W. L. Howard, of the Stoney expedition mentioned the existence of oil shale in his trip down the Etivluk River in 1886 (Smith and Mertie, 1930). Before this time, according to evidence near old camp sites, shale had been used for fuel by Eskimos in interior Alaska. It is now being used for fuel by Eskimos of Anaktuvuk Pass in the central part of the Brooks Range (Donnel and others, 1967). Fragments of oil shale were found by early explorers as far north as the basin bordering the Arctic Ocean during early geological investigations of the area north of the Arctic Circle. Oil shale was collected and identified by Collier (1906), and later by Smith and Mertie (1930) in gravel bars and outcrops in stream cuts. Other deposits, too, were described in earlier reports but were erroneously identified as coal (Tailleur, 1964).

Oil shale is common in an almost continuous belt of Triassic rocks exposed along the north front of the Brooks Range. The oil shale is characteristically dark brown or brownish black with a leathery appearance, commonly has a paper-thin parting, and may be flexible. It can be ignited with a match and burns readily, giving off a black smoke with an oil smell. In the Arctic Foothills Province, pebbles of Triassic oil shale have been reported from a few widely spaced localities on the south side of the Brooks Range.

Detailed geologic mapping in 1950-51 by the U. S. Geological Survey, in connection with geologic evaluation of Naval Petroleum Reserve No. 4, delineated additional oil shale localities. Analysis from oil shale samples of marine oil shale collected by the field parties indicated yields from 6.7 to 146 gallons of oil per ton of rock. In addition to the oil yield, the oil shale showed unusually high concentration of heavy minerals, especially gold, silver, mercury, chromium, barium, strontium, molybdenum, and zinc

Since the Mississippian oil shale yielded only 6.7 gallons of oil per ton, the main field study was in rocks ranging in age from Triassic to Early Cretaceous. The highest oil yields was from tasmanite, a woody appearing oil shale which, from samples at one locality, gave a yield of 130 gallons of oil. Another type of oil shale with high yield is black shale superficially resembling the Green River oil shale. The highest yield from samples was 50 gallons of oil per ton of rock and an average of 15 gallons of oil. A third type of oil shale is called whale blubber rock by Eskimos at Anaktuvuk Pass and is used by them for fuel. The samples yielded about 85 gallons of oil per ton. The localities showing outcrops of oil shale are indicated on the maps at the end of the chapter.

Some of the Alaska oil shales that are rich in both oil and trace metals would in other places ordinarily attract Industry. However, because of environmental conditions, remoteness from market, extravagant high cost of mining and processing and, last but not least, the thinness and limited extent of the presently known deposits, initiation of any commercial oil shale operations in Alaska in the foreseeable future is doubtful.

Bituminous Rock

For this summary, only the petroleum impregnated rocks will be discussed. Oil seeps and oil shale have been described as separate commodities. Location of sample areas are indicated on the maps at the end of the chapter. Geologic information about the extent of outcrops and size of areas is limited because of reconnaissance-type investigations. No estimates can be made of reserves of bituminous rocks.

A brief description is given of bituminous rocks at reported localities:

Omicron Hill. Three sandstone beds in the Kukpowruk Formation of Lower Cretaceous age near Omicron Hill on the Utukok River contain petroleum residue. The petroliferous material was found to be asphaltic in one of the samples (Chapman and Sable, 1960).

Kokolik River. A 7-foot silty sandstone bed which outcrops along the Kokolik River about 42 air miles from its mouth, contains high asphalt content. The sandstone occurs in a coaly sequence of the Corwin Formation of Cretaceous age.

Torok Creek and Fortress Mountain. Asphaltic matter occur as seams along the bedding planes and cross-cutting fractures in the Okpukruak, Fortress Mountain, and Torok Formation of Cretaceous age. On Torok Creek a vertical fracture several feet wide that cuts across strata in the Torok Formation is filled with asphalt. Patton describes black asphaltic shale associated with thinner chert of the Tiglikpuk Formation in the Killik-Itkillik Region. The asphaltic shale is interbedded with chert in 2 and 3 inch beds, and in pod-like masses as much as a foot thick.

Other occurrences are in the Carbon Creek area, in which there is petroleum residue in sandstone. Along the Kigalik-Awuna Rivers area petroleum residue occurs in sandstone. In Etivluk-Kiligwan Rivers area, fracture fillings of grahamite were reported in rocks of the Torok Formation. In the Kavik River-Mount Michelson area, petroleum residue was reported in sandstone beds exposed along the river.

There have been no detailed studies made of areas of bituminous rocks in this province. The information available is insufficient to determine extent of areas underlain by this commodity, and estimates of reserves are not possible. The geologic data does not preclude development of this resource in northern Alaska.

Coal

The principal coal bearing districts of northern Alaska lie north of the Brooks Range and west of the Itkillik and lower Colville Rivers (Barnes, 1967). Coal bearing Cretaceous rocks are known or inferred to underlie about 58,000 square miles of this area. These rocks, consisting mainly of sandstone and shale, have been folded into eastward, trending anticlines and synclines. Near the mountains deformation has been more intense and in places the strata are vertical, but in the foothills, deformation is only moderate, and further north under the Coastal Plain the beds are nearly horizontal. East of the Itkillik and lower Colville Rivers a few scattered coal beds have been reported in Cretaceous rocks and also in Tertiary rocks. Farther west, along the coast south of Cape Lisburne, bituminous coal is exposed in several places where deformation was intense in rocks of Mississippian age. The following description concerning the coal districts is based on published reports of the Geological Survey. The general area underlain by coal is shown on the maps at the end of the chapter.

Corwin Bluff-Cape Beaufort District. At least twenty beds of bituminous coal ranging from 2-1/2 to 9 feet in thickness, as well as many thinner beds, are exposed in beach bluffs from Corwin Bluff, about 30 miles east of Cape Lisburne to Cape Beaufort. These beds dip moderately to steeply southwestward, and one inland outcrop shows the coal bearing rocks extending at least 10 miles along strike.

Kukpowruk River District. Coal bearing rocks are exposed at intervals along the lower 25 miles of the Kukpowruk River where they lie in a series of east-trending synclines which dip 12-55°. Forty of the beds may be repeated by folding. Coal bearing rocks also underlie a small area 70 miles above the mouth of the river and include at least one 3-foot coal bed. Analysis indicated all this coal is bituminous and some beds have coking properties. Geologic evidence suggests large areas on both sides of the river may be underlain by beds of minable thickness.

Kokolik-Utukok Rivers District. Coal beds from 2-6 feet thick are exposed at several places on the Kokolik River near the northern edge of the foothills. The beds are nearly horizontal to moderately folded and all coal beds are of bituminous rank. Coal is exposed at places along the Utukok River between 25 and 80 miles above its mouth in beds ranging a few inches to nearly 12 feet in thickness. The beds are moderately folded and appear to decrease in rank northward from bituminous in the foothills to subbituminous under the Coastal Plain.

Kuk-Kugrua Rivers District. Beds of subbituminous coal ranging from 3 to 14-1/2 feet in thickness, crop out at places along the Kuk and Kugrua Rivers near the Arctic Coast south and east of Wainwright. Those beds are nearly horizontal and some have been reported traced for several miles along the east shore of Kuk estuary, so they may underlie many square miles of the adjacent Coastal Plain.

Farther inland, a test well near the Kaolak River cut a coal bearing section, including 36 coal beds ranging from 3-26 feet in thickness, within 3,000 feet of the surface. Geophysical evidence indicates the well is near the axis of a broad anticline with gently dipping limbs (Collins, 1958). The coal is probably of subbituminous rank, since coal beds in northern Alaska are generally bituminous in rank in areas of more intense deformation.

Meade-Ikpikpuk Rivers District. Coal of probable bituminous rank is exposed at several localities near the head of Meade River, in beds ranging from 2-6 feet in thickness. Farther downstream, subbituminous coal beds, mostly less than 5 feet thick, crop out at places between 25 and 100 miles from the mouth of the river. At one locality at Meade River, a small mine has been operated to supply fuel for Barrow. A test well, a few miles west of the river near the edge of the Coastal Plain, cuts a coal-bearing section which includes 21 coal beds 4-30 feet thick within 2,000 feet of the surface. The coal lies in a broad anticline and is believed subbituminous.

Subbituminous coal is exposed at several places along the Ikpikpuk River on the Coastal Plain, but all the known beds are too thin to be of value. On the Kigalik River, a tributary of the Ikpikpuk River, several beds of subbituminous coal 2-1/2 to 5 feet thick are exposed; and, 2 beds of comparable thickness were found in a test well just east of the Upper Ikpikpuk River.

Colville River District. In this district, which includes the basin of the Colville River and its tributaries, coal is widely distributed both in the foothills and Coastal Plain. Subbituminous coal occurs in the eastern part of the district in the Prince Creek Formation of Late Cretaceous age in beds mostly less than 5 feet thick, but includes some that are 10 feet thick. Bituminous coal crops out at many places along the northeast-trending segment of the Colville River and its southern tributaries in the Chandler Formation of Cretaceous age. The beds range in thickness from a few inches to 8 feet, but many are less than 3 feet. The subbituminous coal of this district generally occur in broad synclinal basins with low dips. The bituminous coal is restricted to the moderately folded rocks of the foothills.

Coal reserves are given for each district in the Geological Survey publications. Barnes (1967) indicates total bituminous coal reserves for northern Alaska at 19,292 million tons, and total subbituminous reserves at 100,905 million tons.

Other than the limited production from the Meade River Coal Mine for use in the village of Barrow, coal fields in northern Alaska have not been developed. Tremendous reserves of bituminous and subbituminous coal are present but which must await an available market. Some of the coal in the Kukpowruk coal field and Corwin Bluff District have coking properties. This metallurgical coal has stimulated interest in Japan where there is a ready market in their rapidly expanding steel industry. The lack of markets, the remoteness of the coal field, and the high cost of coal mining are factors which will delay the development of the coal fields of northern Alaska. The earliest reports of exploration of north-

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ern Alaska do not mention a prior usage of coal by the Eskimos and, although the Eskimos use the resource today he may have learned the use of coal as fuel from the white man.

Phosphate

During the geologic investigation of Naval Petroleum Reserve No. 4, and adjoining areas between 1944 and 1958, deposits of sedimentary phosphate rock were discovered on the Arctic Slope of Alaska. Phosphate rock deposits in northern Alaska have been found at widely scattered localities and in two separate stratigraphic units, the Lisburne group of Mississippian age and the Shublik Formation of Triassic age. The location and extent of the deposits are shown on the maps at the end of the chapter. Within this area, phosphate rock containing more than 10 percent P_2O_5 is known in three general localities; (1) in the eastern Brooks Range in a zone about 50 miles long and up to 15 miles wide, between the Canning and Okpilak River; (2) in a narrow zone about 40 miles long in the central Brooks Range that extends between the upper Chandler and Anaktuvuk Rivers and especially in the area between Tiglukpuk Creek and Kiruktagiak River; and at two localities in the western Brooks Range within the headwaters of the Colville River between the Kuna and Etivluk Rivers. Phosphate rock containing less than 10 percent P_2O_5 have been found locally between the three general areas described above and are reported as far west as longitude 131°30'W. (Patton, Jr., 1959).

The phosphate rock in northern Alaska is interbedded with a thick sequence of limestone, shale, and chert of the Alapah limestone within the Lisburne group of Mississippian age and in the Shublik Formation of Triassic age. These units crop out in a discontinuous east-trending belt along the northern slope of the Brooks Range and adjoining foothills. In the Canning-Okpilak Rivers area of the eastern Brooks Range a phosphate rock is chiefly within the lower 300 feet of the Shublik Formation; those to the west are in the Lisburne group. In the eastern part of the Brooks Range-Arctic Foothills belt the rocks are deformed principally by faults of minor displacement and eastward-trending folds, some of which are overturned to the north. The intensity of deformation increases westward in the Brooks Range so that strata in the central and western part of the belt are offset by imbricate faults and large-scale overthrusts.

The best phosphate rock resources in Alaska are in the central Brooks Range. The phosphatic zone in the Alapah limestone probably extends continuously along the front of the Brooks Range between Tiglukpuk Creek and Kiruktagiak River for some 28 miles. In this area, the phosphatic zone is from 36 to 38 feet thick and averages 8 to 12 percent P_2O_5; nearly all the phosphate rock is low or medium grade. Furnace grade phosphate rock of 25 percent or more P_2O_5 was found in thickness of as much as 37 inches, but the thickest bed of acid grade rock of 31 percent or more P_2O_5 is only 16 inches. The phosphate mineral is carbonate fluorapatite, and it is generally similar in mineralogy phosphate, uranium, and minor element content to phosphates from the Phosphoria Formation of Permian age in northwestern United States.

In the eastern Brooks Range phosphatic rocks as much as 300 feet thick, that locally contain up to 35.8 percent P_2O_5 occur in the Shublik Formation. Although no details are available on the thickness or extent of these deposits, the grade and widespread distribution of the samples indicate the presence of substantial resources of phosphate rock.

Known phosphate rock deposits in the western Brooks Range are low-grade and occur in very thin beds. This area has been well mapped during Naval Petroleum Reserve No. 4 investigations and, it is believed that there probably are no additional large deposits of phosphate rock present.

There has been no production of phosphate rock in Alaska. Although there are considerable reserves of low and medium grade phosphate rock, economic factors such as available markets, remoteness of area, high costs of mining, and transportation preclude development of this resource. Large reserves of phosphate rock are available in the United States, and the development of Alaska's phosphate resources must be competitive with this expanding industry. It appears from the review that development of phosphate resources in Alaska must be dependent on more favorable economic factors which are not present in the foreseeable future.

Other Leasable Minerals

There are no reported occurrences of deposits of native sulphur or the existence of thermal springs in the area north of the Brooks Range.

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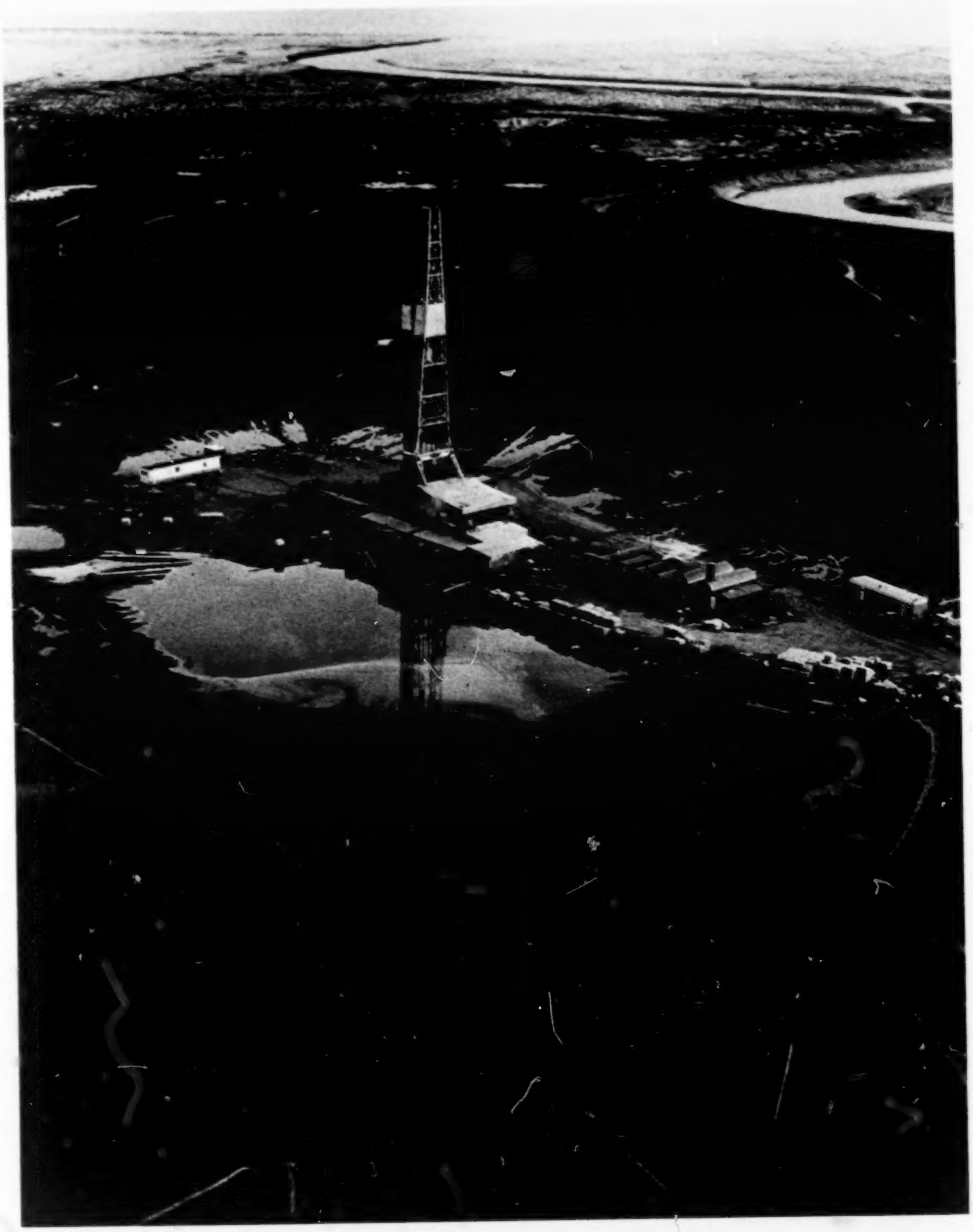
ulphur
Range.



Oil has changed the Alaska economy.
Photo by Bureau of Commercial Fisheries.

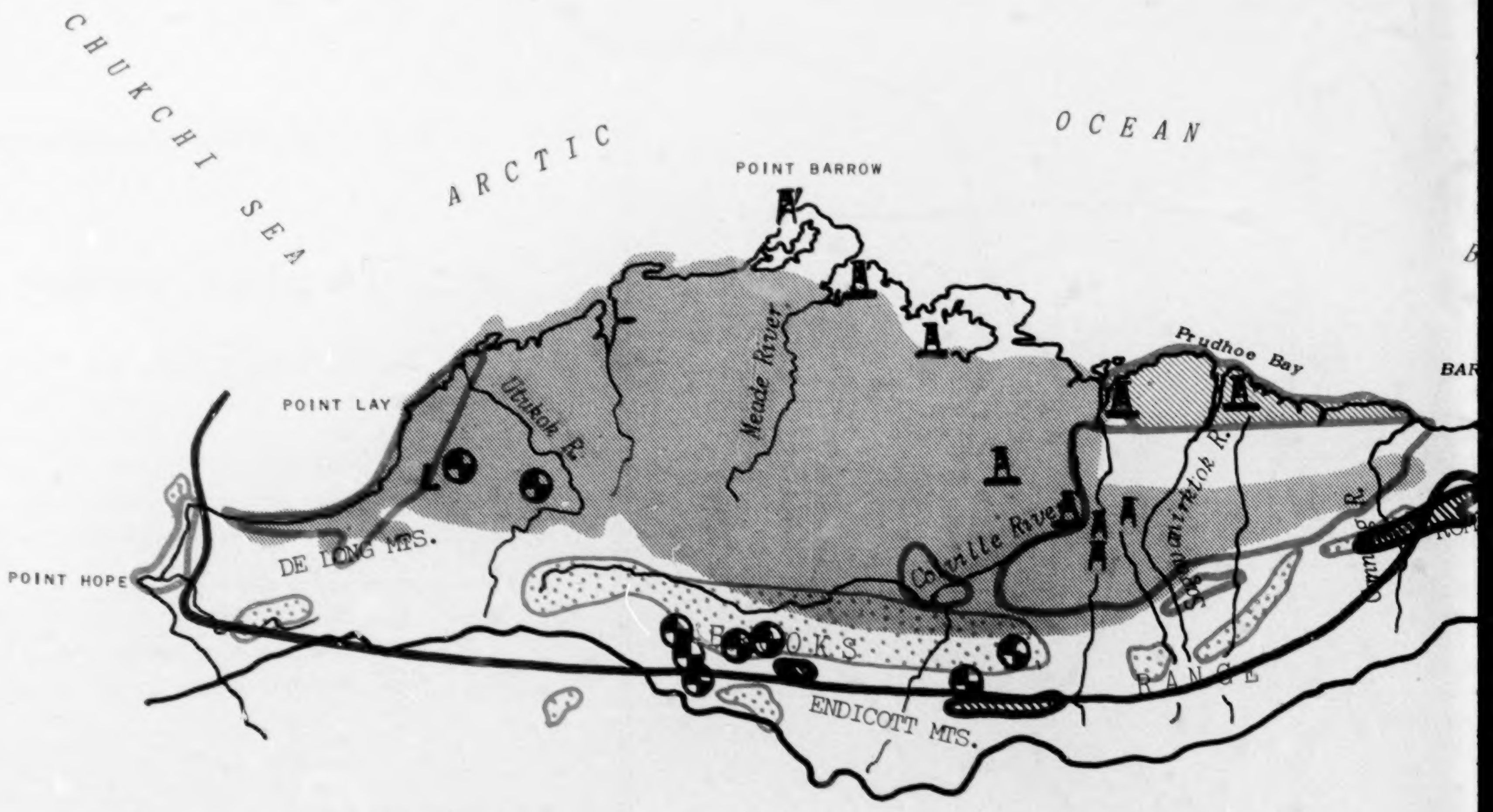
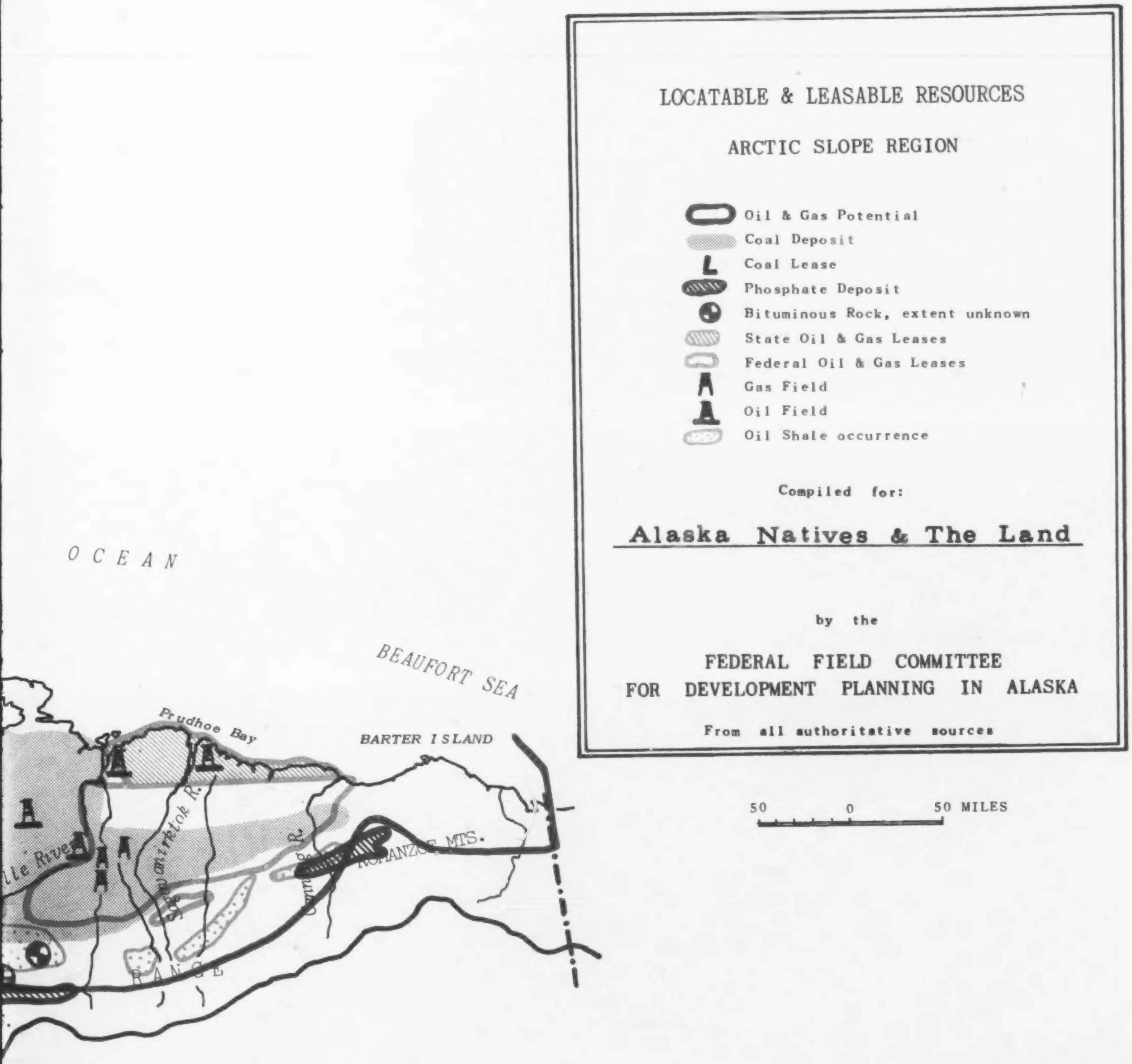

CHUKCHI SEA
ARCTIC
OCEAN
POINT BARROW
Prudhoe Bay
BAR
POINT LAY
Utukok R.
Meade River
Colville River
Sagavanirktok R.
POINT HOPE
DE LONG MTS.
BROOKS
RANGE
ENDICOTT MTS.

FIGURE IV - 64


OCEAN
BEAUFORT SEA
Prudhoe Bay
BARTER ISLAND
lle River
Sagavanirktok R.
Canning R.
ROMANZOF MTS.
RANGE
50 0 50 MILES

LOCATABLE & LEASABLE RESOURCES

ARCTIC SLOPE REGION

- ⬭ Oil & Gas Potential
- ▒ Coal Deposit
- L Coal Lease
- ▨ Phosphate Deposit
- ⊕ Bituminous Rock, extent unknown
- ▨ State Oil & Gas Leases
- ⬭ Federal Oil & Gas Leases
- ▲ Gas Field
- ▲ Oil Field
- ░ Oil Shale occurrence

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From all authoritative sources

FIGURE IV - 64

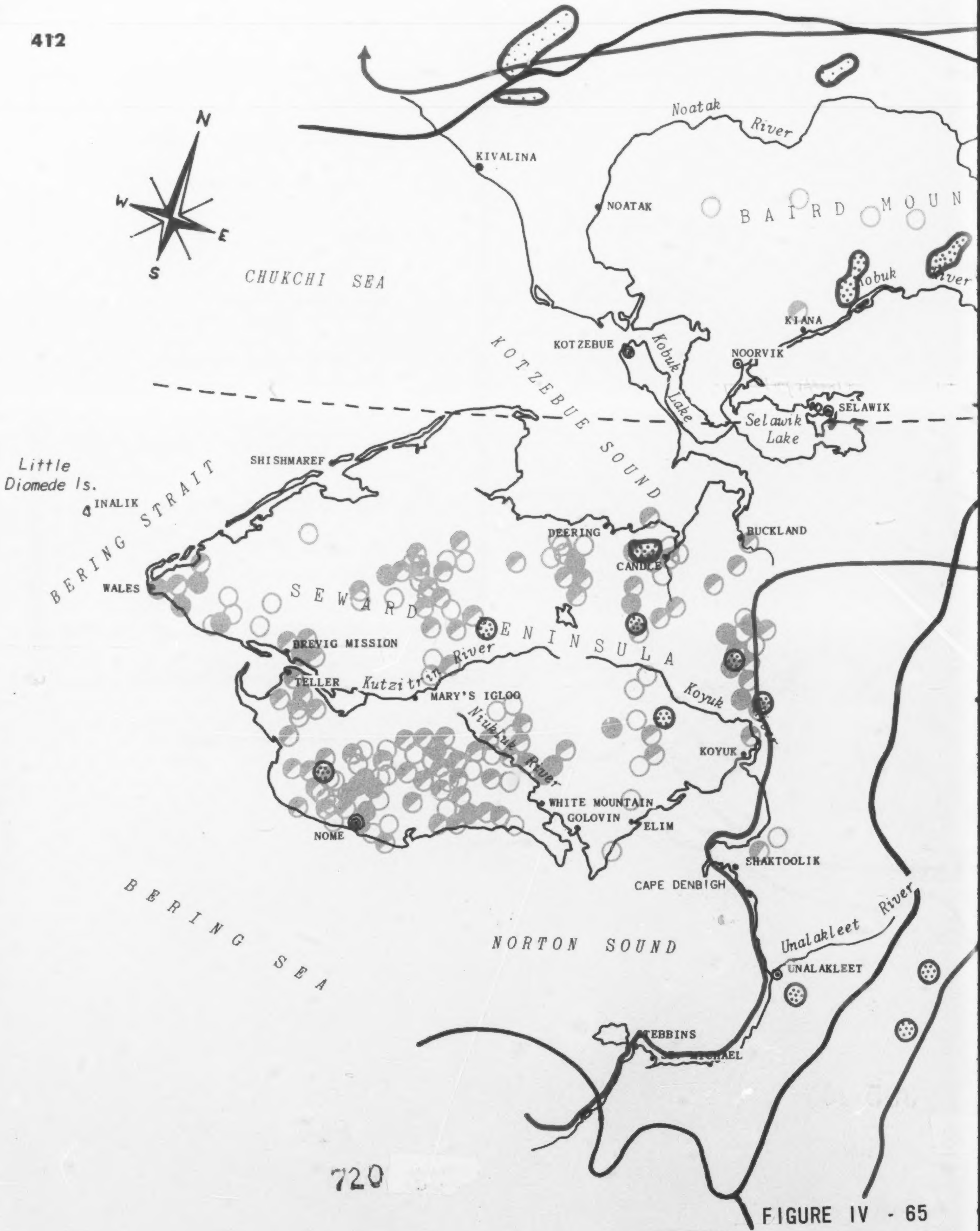
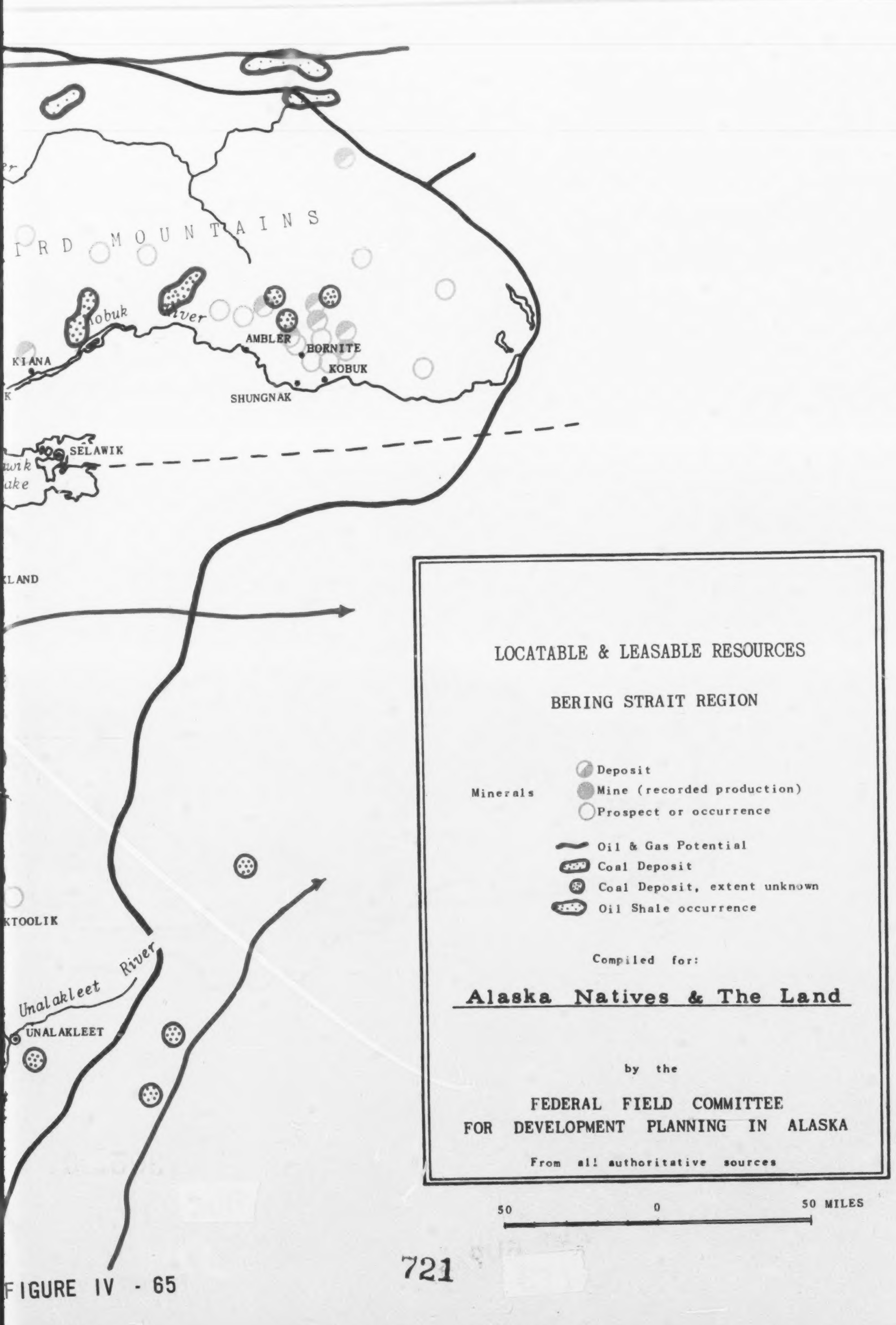

N
W
E
S
CHUKCHI SEA
KIVALINA
Noatak River
NOATAK
BAIRD MOUN
Kobuk River
KIANA
KOTZEBUE
NOORVIK
Kobuk Lake
KOTZEBUE SOUND
SELAWIK
Selawik Lake
SHISHMAREF
Little Diomede Is.
INALIK
BERING STRAIT
WALES
SEWARD PENINSULA
DEERING
CANDLE
BUCKLAND
BREVIG MISSION
TELLER
Kutzitrin River
MARY'S IGLOO
Niukluk River
Koyuk
KOYUK
WHITE MOUNTAIN
GOLOVIN
ELIM
NOME
SHAKTOOLIK
CAPE DENBIGH
BERING SEA
NORTON SOUND
Unalakleet River
UNALAKLEET
STEBBINS
ST. MICHAEL

FIGURE IV - 65


IRD MOUNTAINS
Kobuk River
KIANA
AMBLER
BORNITE
KOBUK
SHUNGNAK
SELAWIK
wik
ake
KLAND
KTOOLIK
Unalakleet River
UNALAKLEET
50
0
50 MILES

LOCATABLE & LEASABLE RESOURCES

BERING STRAIT REGION

Minerals
- ◐ Deposit
- ● Mine (recorded production)
- ○ Prospect or occurrence

- Oil & Gas Potential
- Coal Deposit
- Coal Deposit, extent unknown
- Oil Shale occurrence

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From all authoritative sources

FIGURE IV - 65

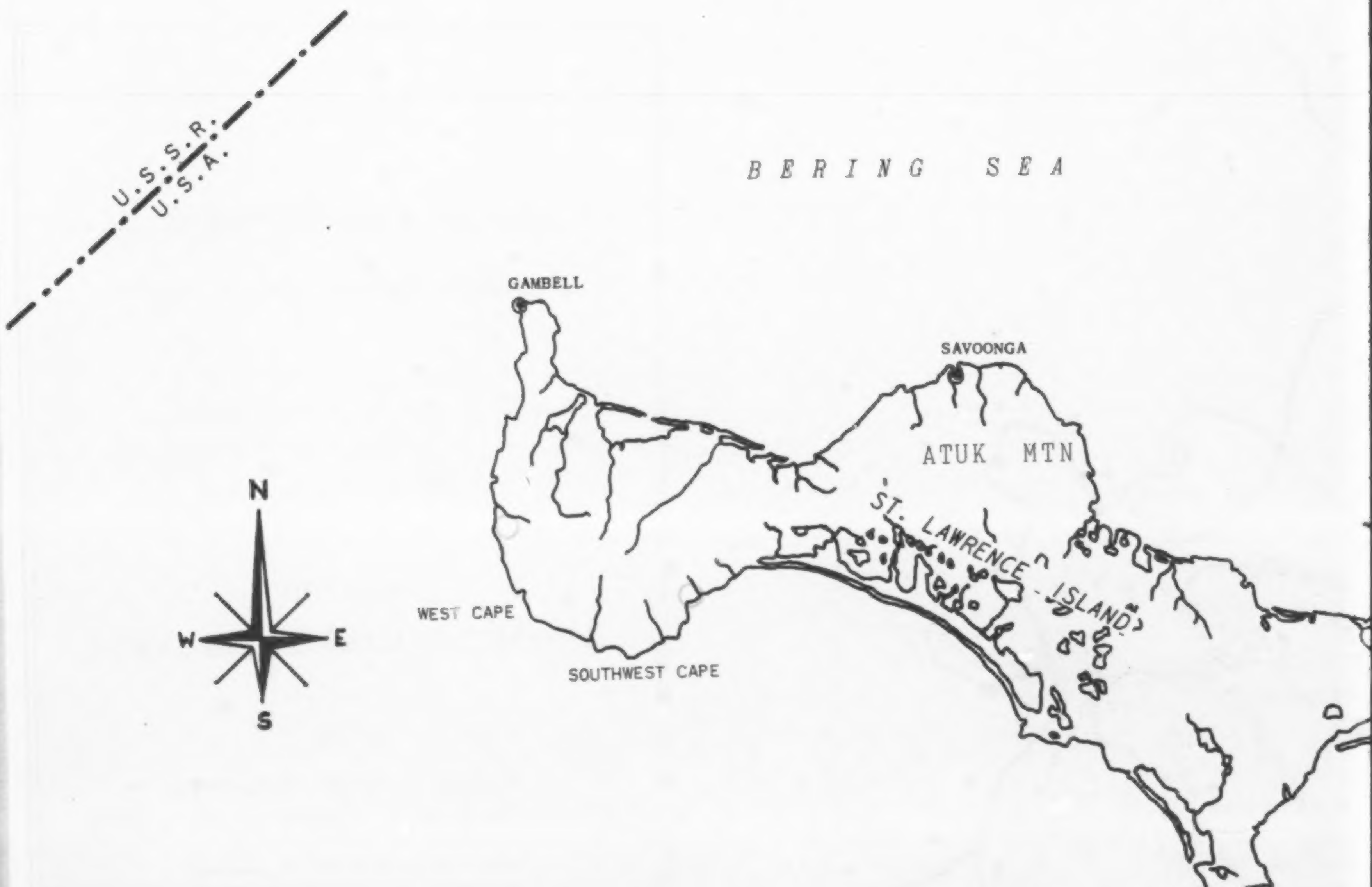
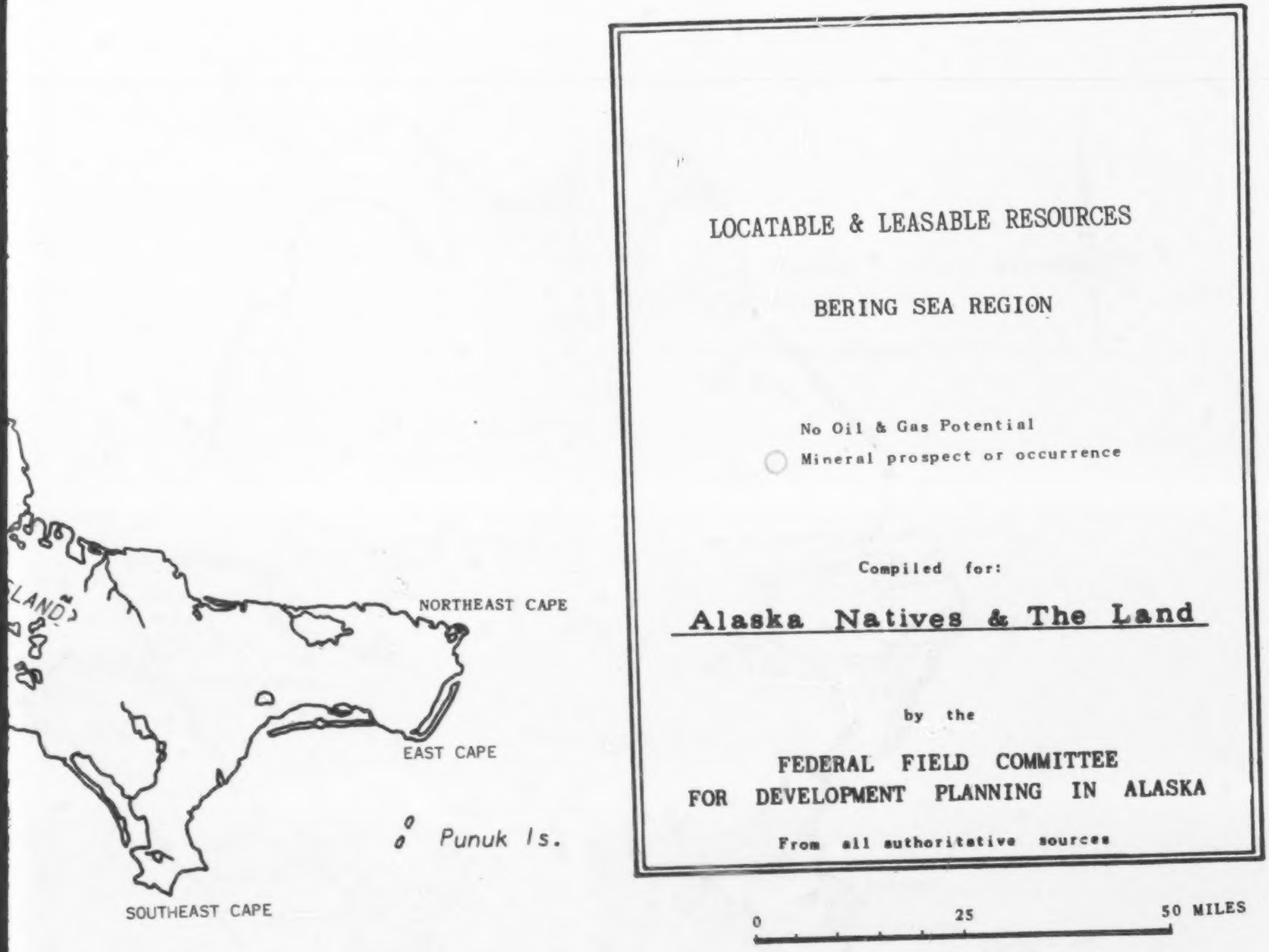

U.S.S.R.
U.S.A.
BERING SEA
GAMBELL
SAVOONGA
ATUK MTN
ST. LAWRENCE ISLAND
N
W
E
S
WEST CAPE
SOUTHWEST CAPE
SOUTHEAST CAPE
Hall Is.
ST. MATTHEW ISLAND

FIGURE IV - 66



LOCATABLE & LEASABLE RESOURCES

BERING SEA REGION

No Oil & Gas Potential

○ Mineral prospect or occurrence

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From all authoritative sources

LAND
NORTHEAST CAPE
EAST CAPE
Punuk Is.
SOUTHEAST CAPE
0
25
50 MILES

FIGURE IV - 66

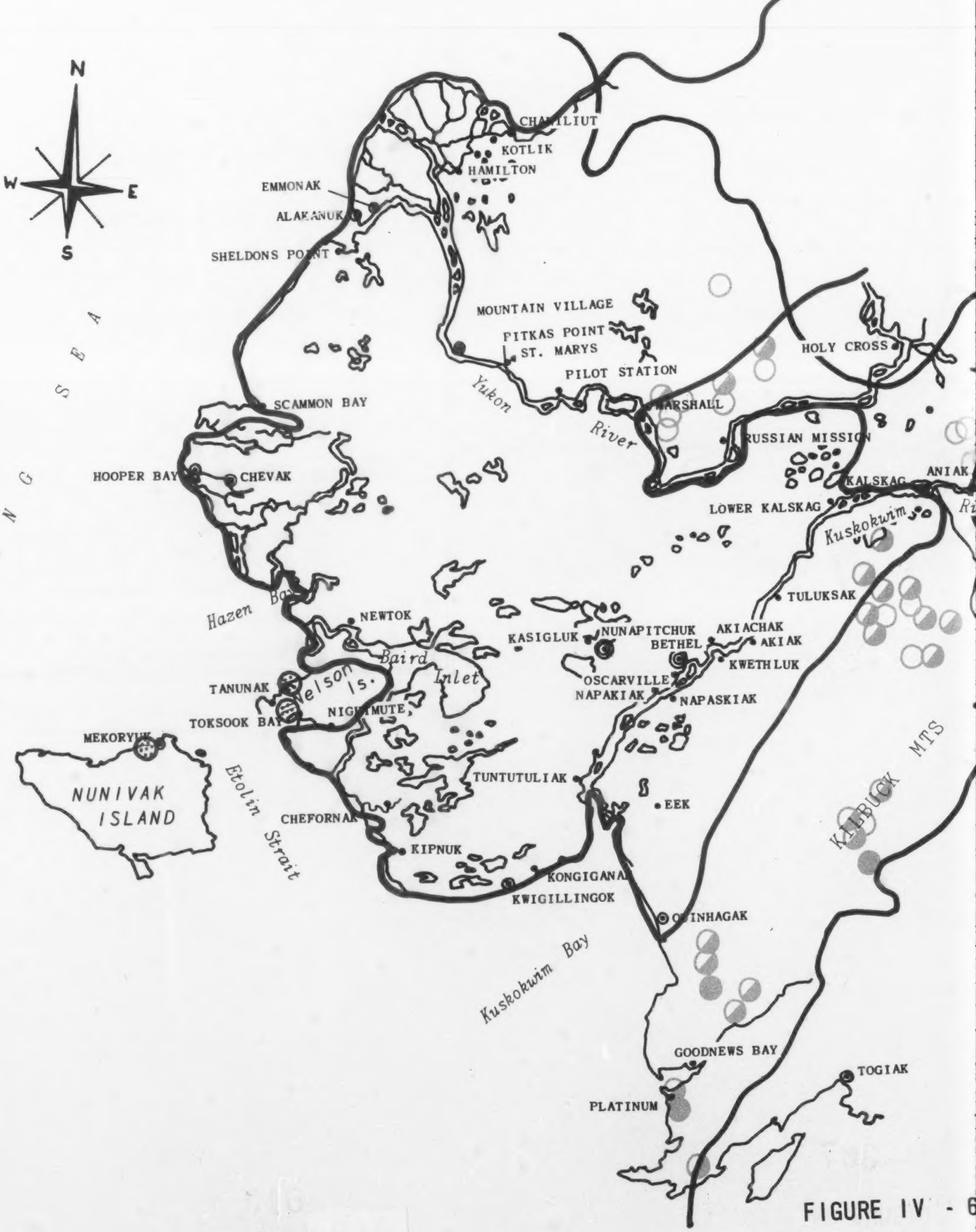
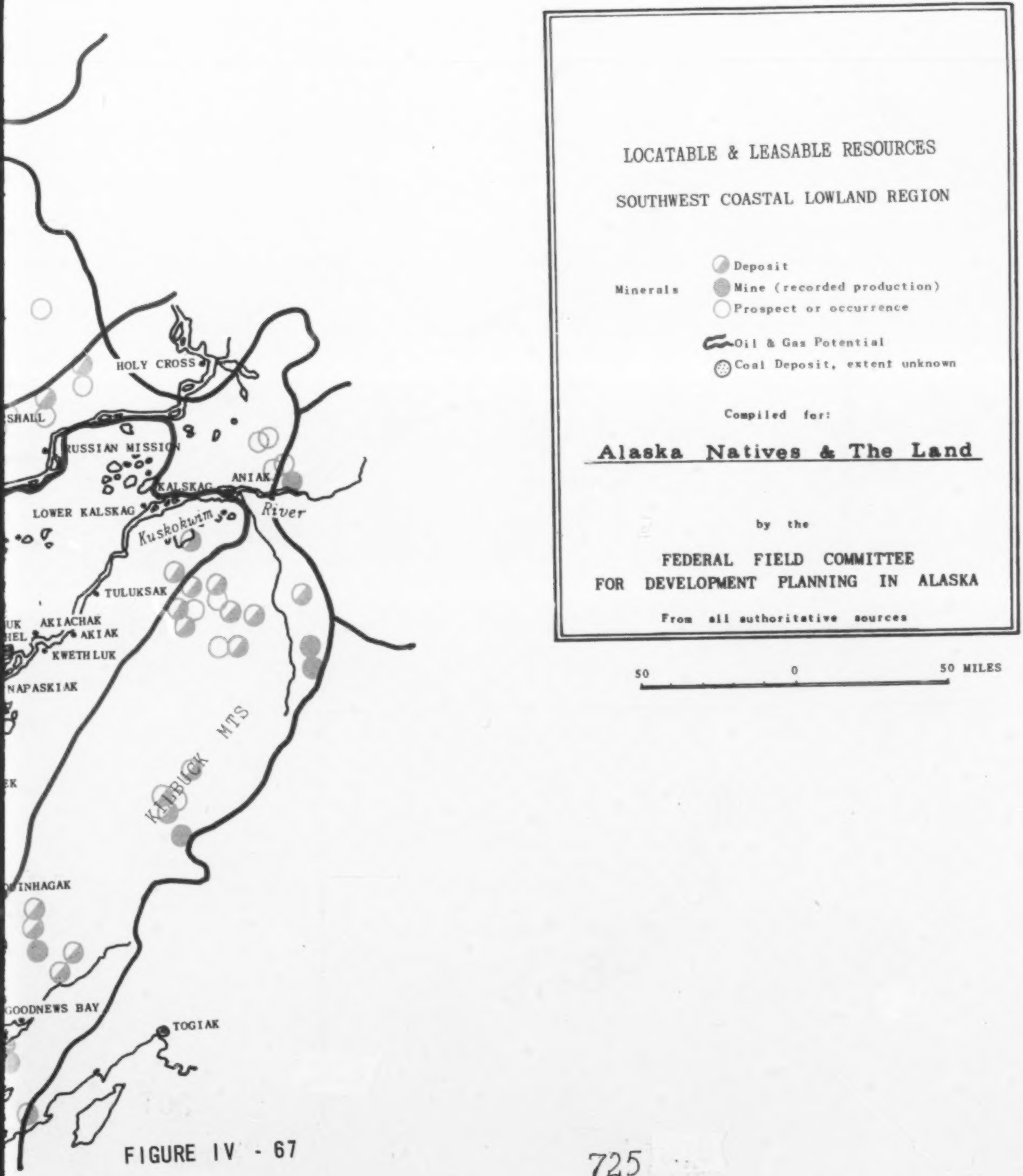

N
W
E
S
BERING SEA
CHANILIUT
KOTLIK
HAMILTON
EMMONAK
ALAKANUK
SHELDONS POINT
MOUNTAIN VILLAGE
PITKAS POINT
ST. MARYS
PILOT STATION
HOLY CROSS
MARSHALL
RUSSIAN MISSION
KALSKAG
ANIAK
LOWER KALSKAG
Yukon River
SCAMMON BAY
HOOPER BAY
CHEVAK
Kuskokwim
TULUKSAK
Hazen Bay
NEWTOK
Baird Inlet
KASIGLUK
NUNAPITCHUK
AKIACHAK
BETHEL
AKIAK
KWETHLUK
OSCARVILLE
NAPAKIAK
NAPASKIAK
TANUNAK
Nelson Is.
NIGHTMUTE
TOKSOOK BAY
MEKORYUK
NUNIVAK ISLAND
Etolin Strait
TUNTUTULIAK
EEK
CHEFORNAK
KIPNUK
KONGIGANAK
KWIGILLINGOK
QUINHAGAK
KILBUCK MTS
Kuskokwim Bay
GOODNEWS BAY
TOGIAK
PLATINUM

FIGURE IV - 6


LOCATABLE & LEASABLE RESOURCES
SOUTHWEST COASTAL LOWLAND REGION
Minerals
Deposit
Mine (recorded production)
Prospect or occurrence
Oil & Gas Potential
Coal Deposit, extent unknown
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From all authoritative sources
50
0
50 MILES
HOLY CROSS
SHALL
RUSSIAN MISSION
ANIAK
KALSKAG
LOWER KALSKAG
Kuskokwim
River
TULUKSAK
UK
AKIACHAK
HEL
AKIAK
KWETHLUK
NAPASKIAK
KILBUCK MTS
EK
QUINHAGAK
GOODNEWS BAY
TOGIAK

FIGURE IV - 67

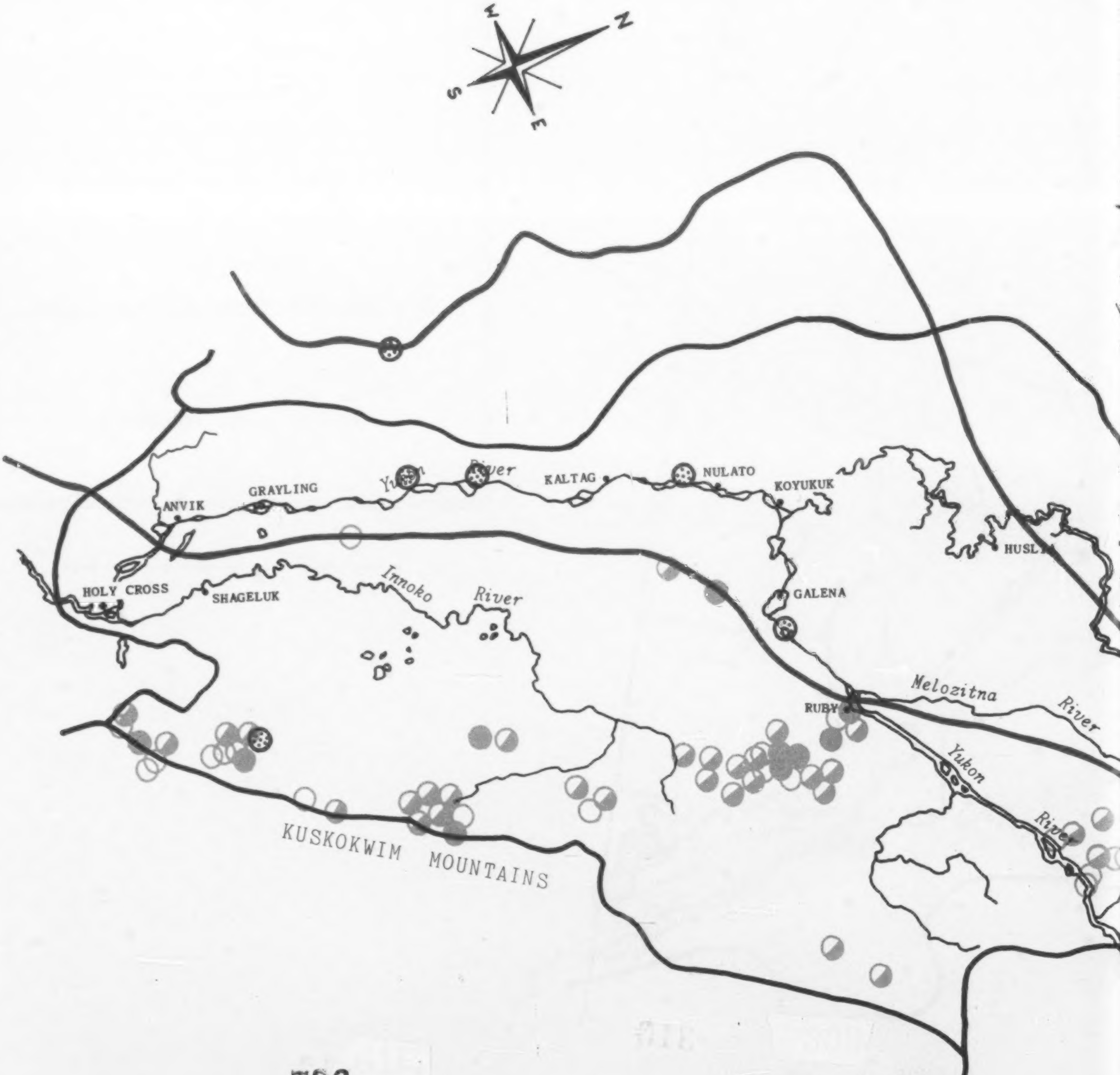
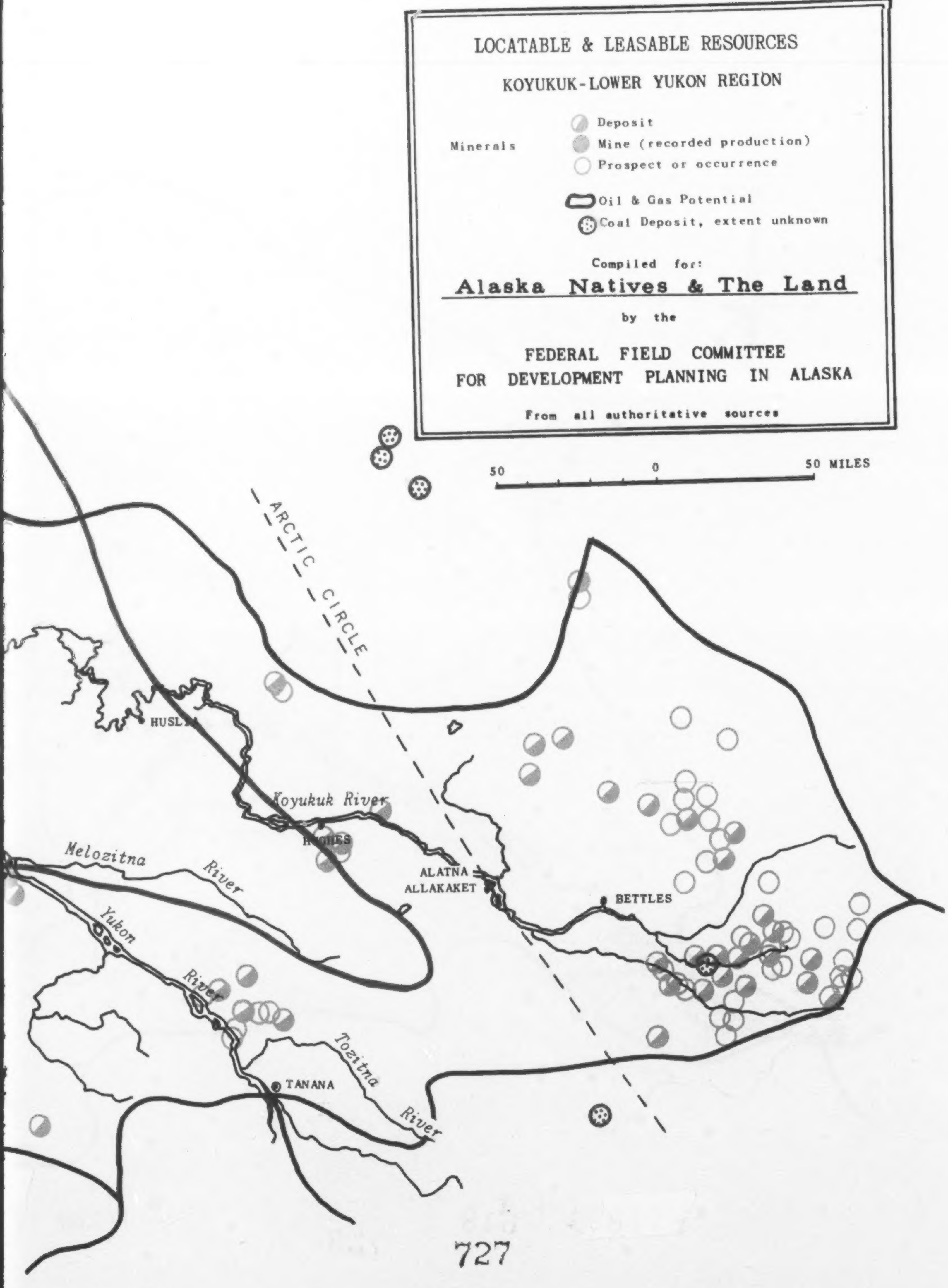

W
N
S
E
ANVIK
GRAYLING
Yukon
River
KALTAG
NULATO
KOYUKUK
HUSLI
HOLY CROSS
SHAGELUK
Innoko
River
GALENA
RUBY
Melozitna
River
Yukon
River
KUSKOKWIM MOUNTAINS

FIGURE IV - 68



LOCATABLE & LEASABLE RESOURCES

KOYUKUK-LOWER YUKON REGION

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From all authoritative sources

Minerals
Deposit
Mine (recorded production)
Prospect or occurrence
Oil & Gas Potential
Coal Deposit, extent unknown
50
0
50 MILES
ARCTIC CIRCLE
HUSLIA
Koyukuk River
HUGHES
Melozitna River
Yukon River
ALATNA
ALLAKAKET
BETTLES
Tozitna River
TANANA

GURE IV - 68

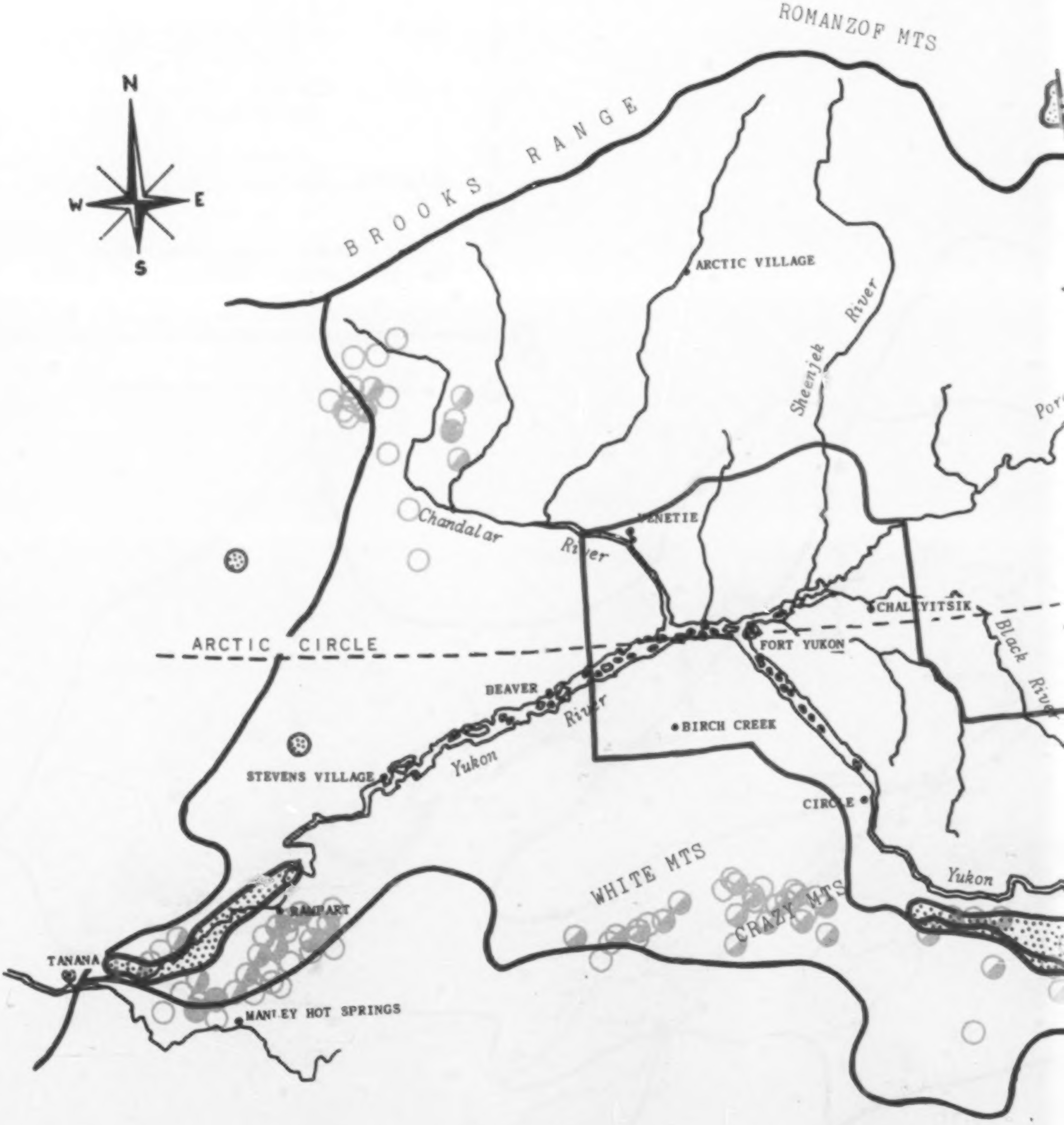
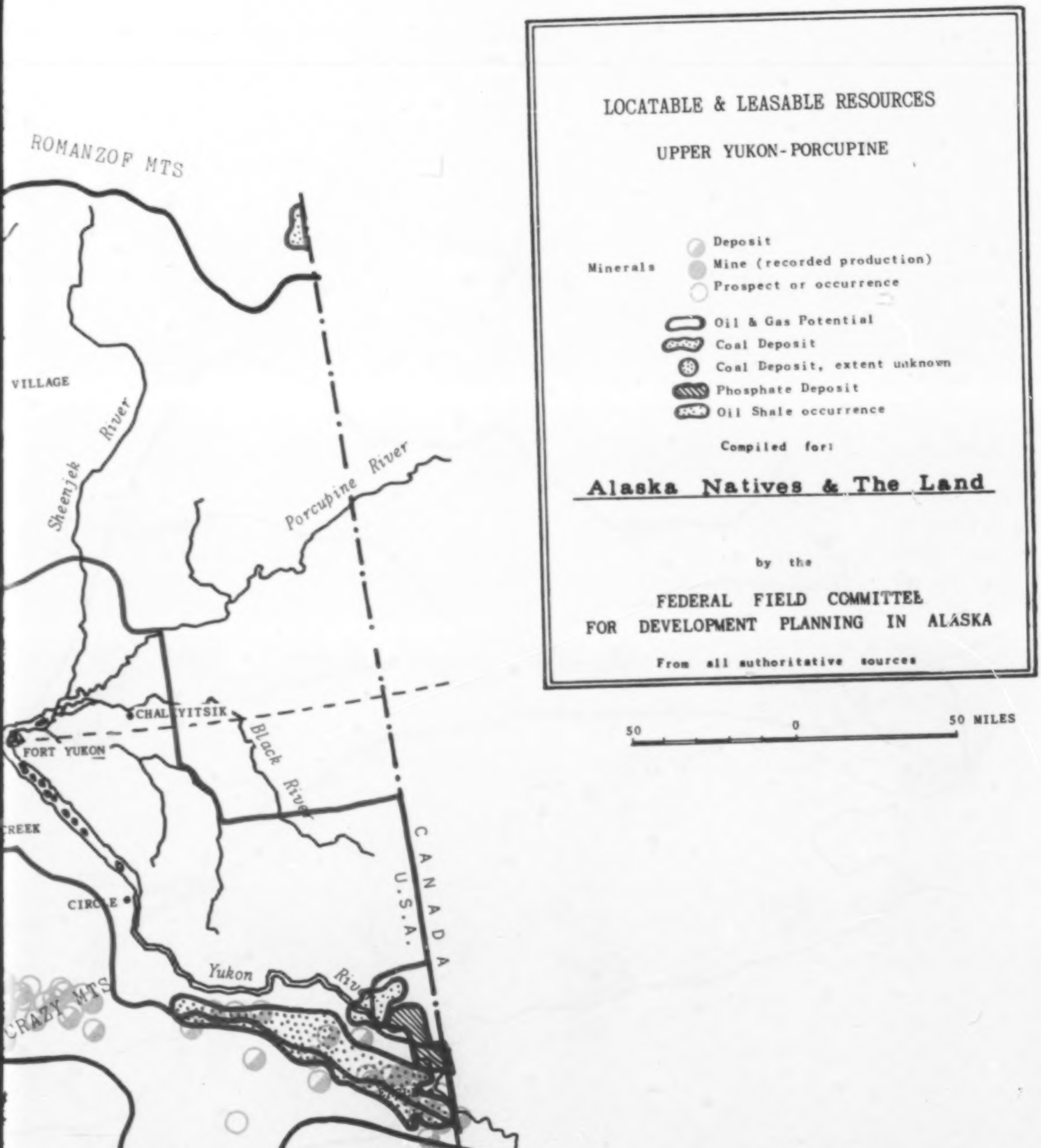

ROMANZOF MTS
BROOKS RANGE
N
W
E
S
ARCTIC VILLAGE
Sheenjek River
Por
Chandalar River
VENETIE
CHALKYITSIK
Black River
ARCTIC CIRCLE
FORT YUKON
BEAVER
Yukon River
BIRCH CREEK
STEVENS VILLAGE
CIRCLE
WHITE MTS
CRAZY MTS
Yukon
RAMPART
TANANA
MANLEY HOT SPRINGS

FIGURE IV 69


ROMANZOF MTS
VILLAGE
Sheenjek River
Porcupine River
CHALKYITSIK
Black River
FORT YUKON
CREEK
CIRCLE
Yukon River
CRAZY MTS
CANADA
U.S.A.
LOCATABLE & LEASABLE RESOURCES
UPPER YUKON-PORCUPINE
Minerals
Deposit
Mine (recorded production)
Prospect or occurrence
Oil & Gas Potential
Coal Deposit
Coal Deposit, extent unknown
Phosphate Deposit
Oil Shale occurrence
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From all authoritative sources
50
0
50 MILES

FIGURE IV 69

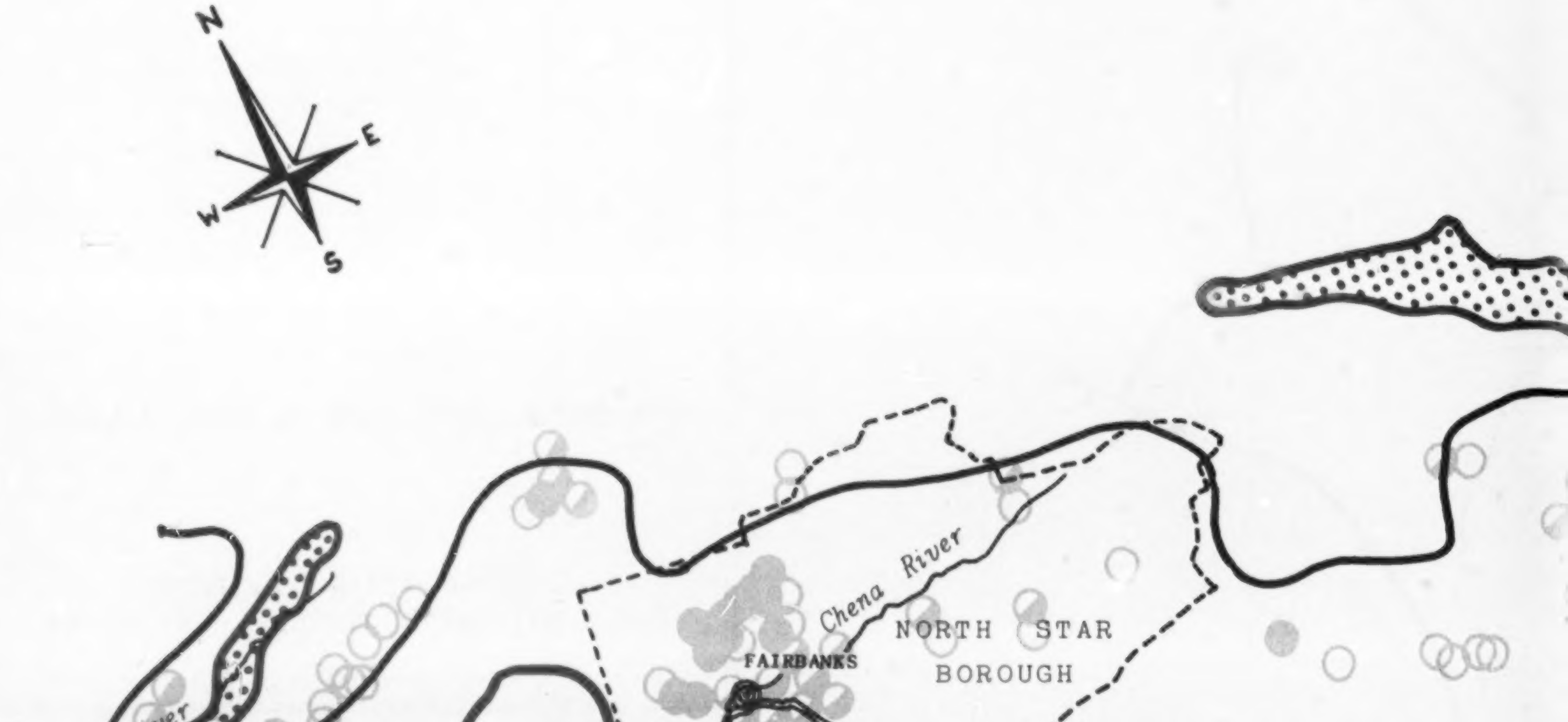
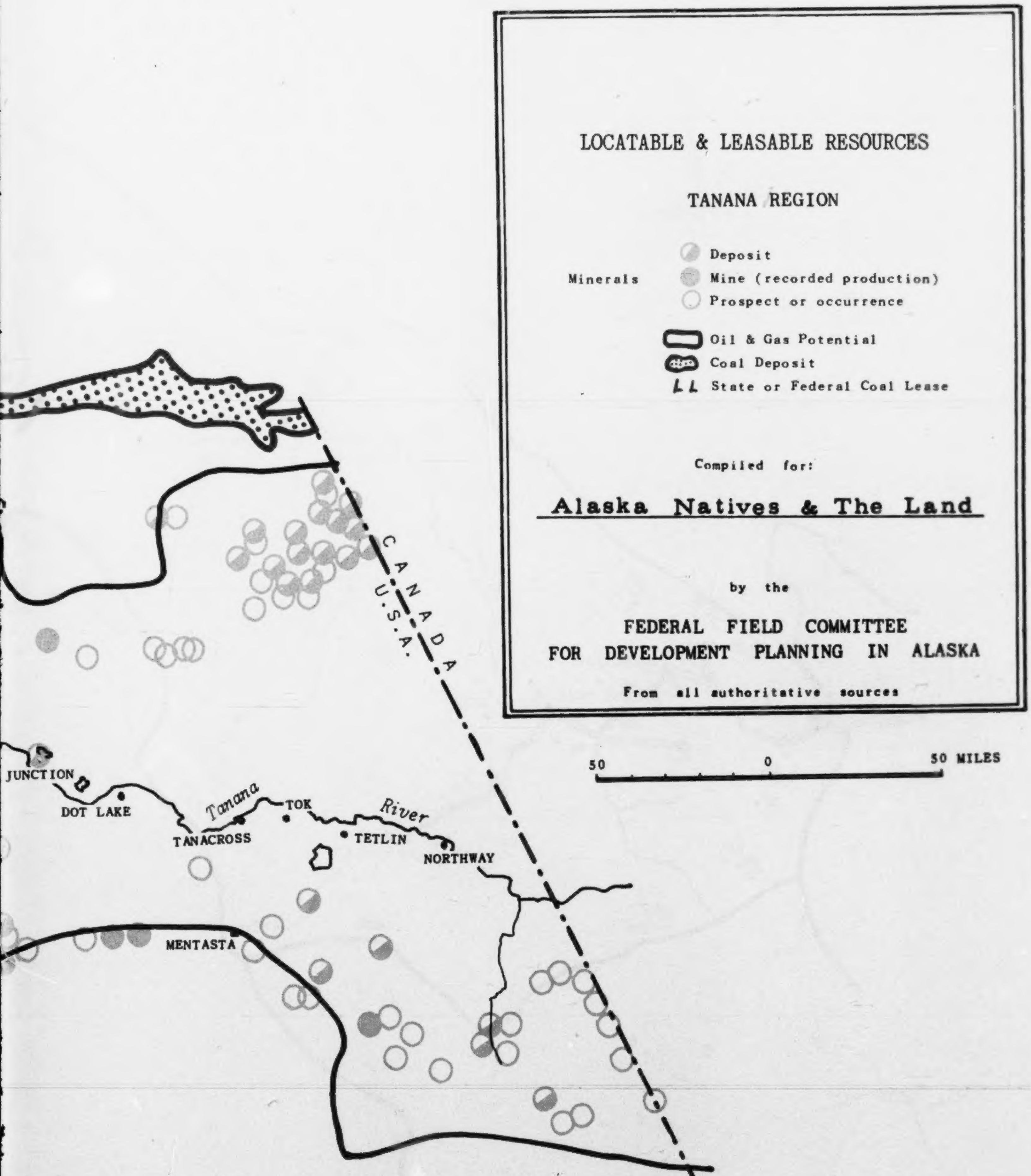

N
E
W
S
Yukon River
MANLEY HOT SPRINGS
Tanana River
MINTO
NENANA
Chena River
FAIRBANKS
NORTH STAR
BOROUGH
BIG DELTA
DELTA JUNCTION
DOT LAKE
Tanan
TANACROSS
MENTASTA
HEA
Nenana River
ALASKA RANGE
CANTWELL

FIGURE IV - 70



LOCATABLE & LEASABLE RESOURCES

TANANA REGION

Minerals
- ◐ Deposit
- ● Mine (recorded production)
- ○ Prospect or occurrence

- ▭ Oil & Gas Potential
- ▨ Coal Deposit
- L L State or Federal Coal Lease

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From all authoritative sources

50
0
50 MILES
CANADA
U.S.A.
JUNCTION
DOT LAKE
Tanana
TANACROSS
TOK
River
TETLIN
NORTHWAY
MENTASTA

FIGURE IV - 70

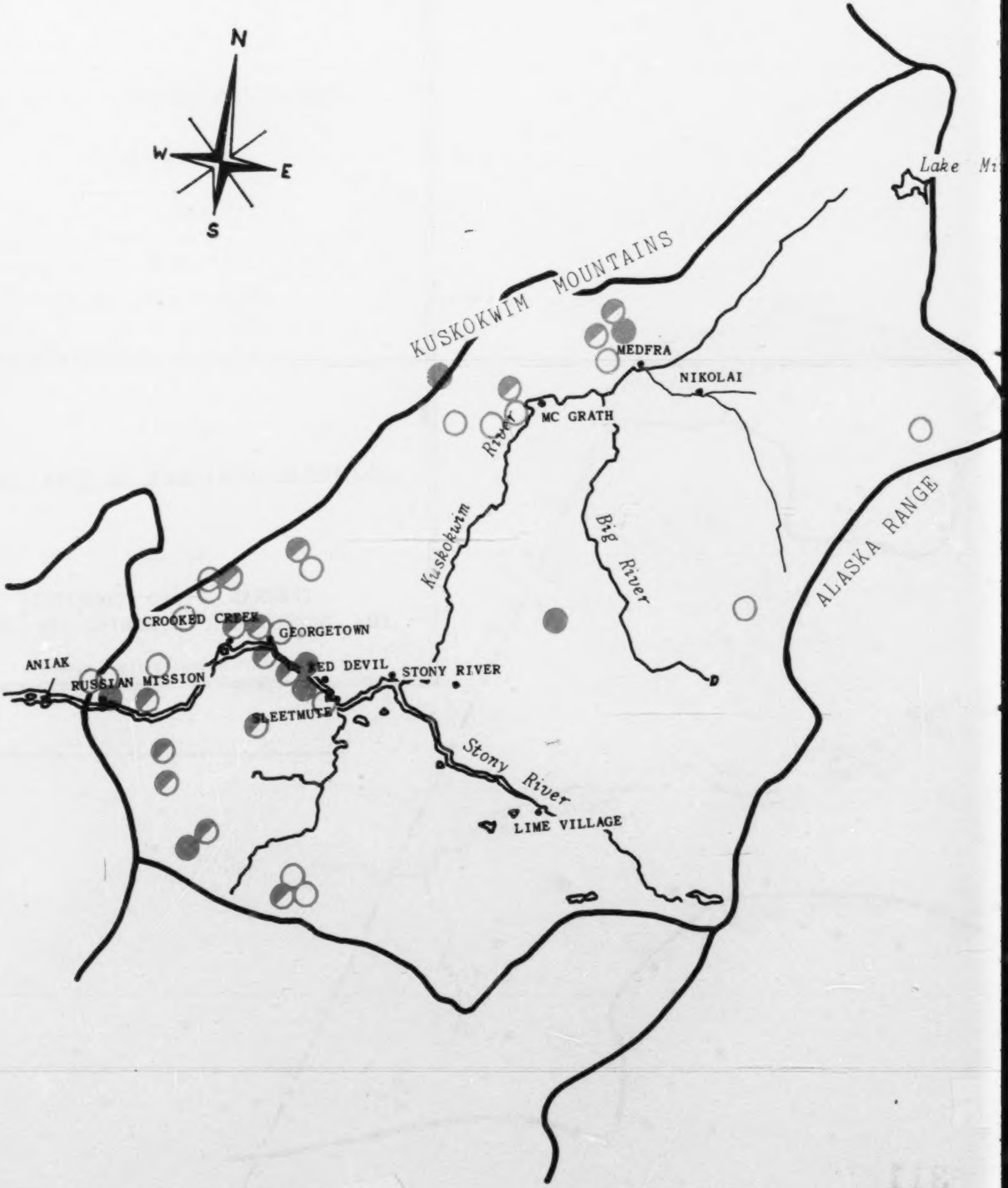
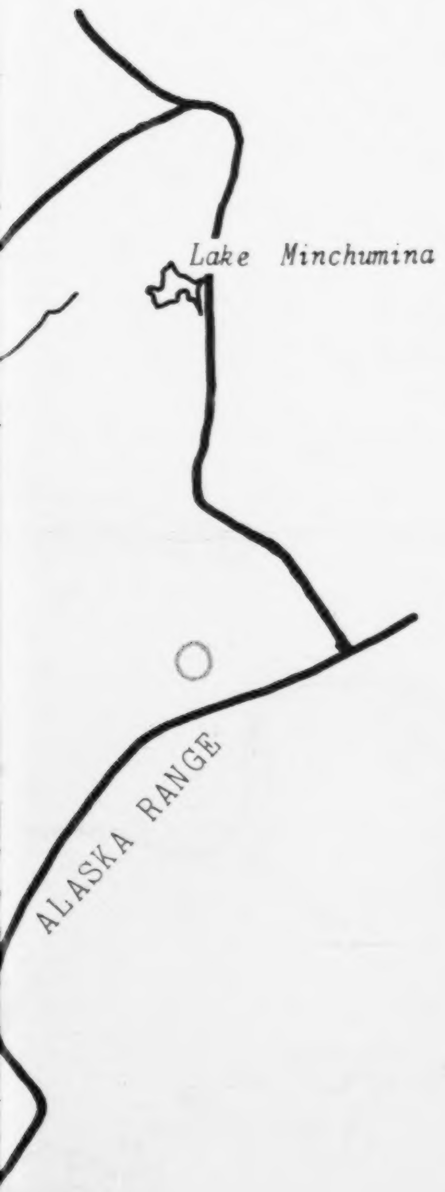

N
W
E
S
KUSKOKWIM MOUNTAINS
ALASKA RANGE
Lake Mi
MEDFRA
NIKOLAI
MC GRATH
River
Kuskokwim
Big River
CROOKED CREEK
GEORGETOWN
ANIAK
RUSSIAN MISSION
RED DEVIL
STONY RIVER
SLEETMUTE
Stony River
LIME VILLAGE

FIGURE IV



LOCATABLE & LEASABLE RESOURCES

UPPER KUSKOKWIM REGION

Minerals
◐ Deposit
● Mine (recorded production)
○ Prospect or occurrence

No Oil & Gas Potential

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From all authoritative sources

50 0 50 MILES

FIGURE IV · 71

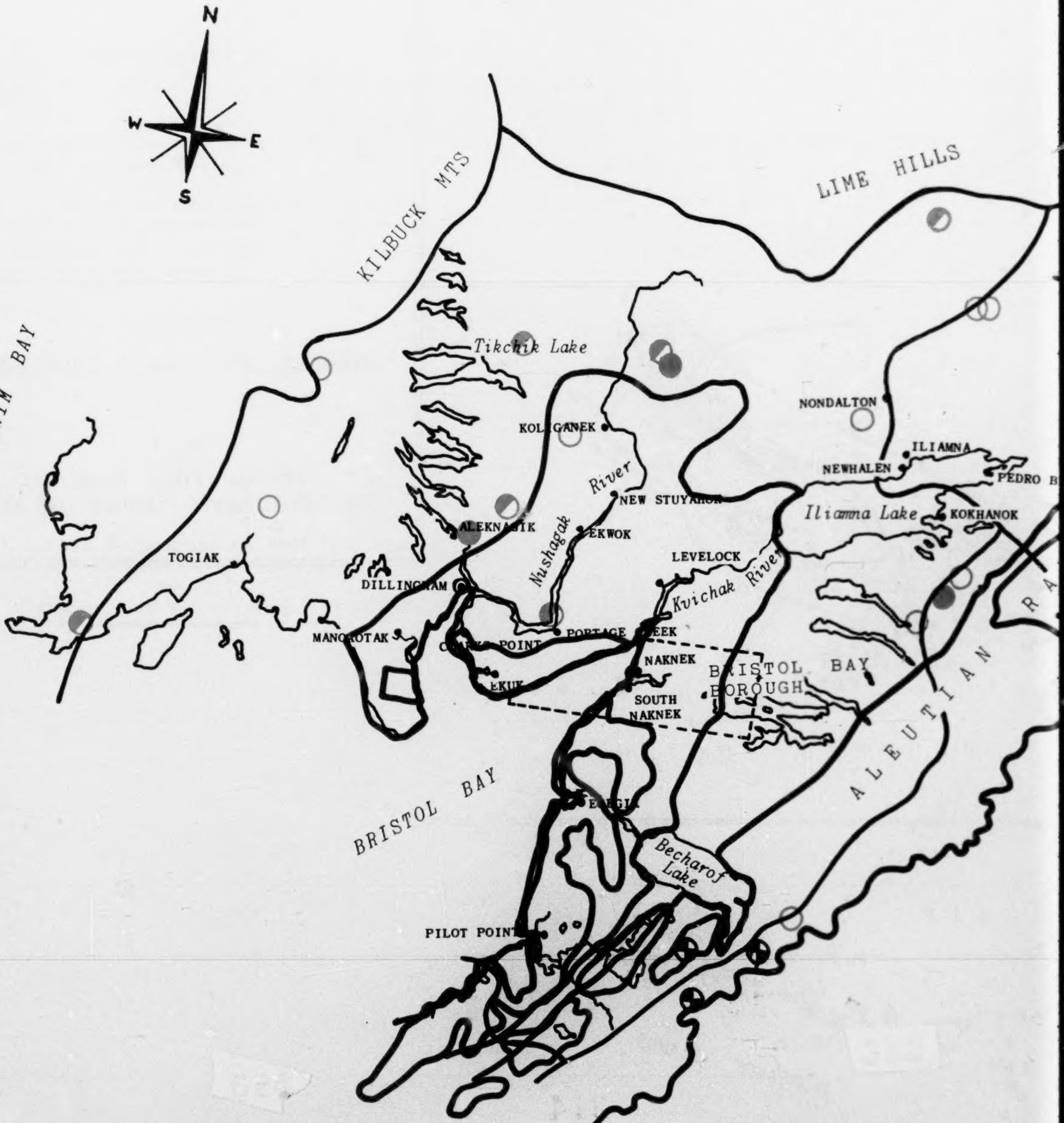
N
W
E
S
KILBUCK MTS
LIME HILLS
KUSKOKWIM BAY
Tikchik Lake
NONDALTON
KOLIGANEK
ILIAMNA
NEWHALEN
PEDRO B
Nushagak River
NEW STUYAHOK
Iliamna Lake
KOKHANOK
ALEKNAGIK
EKWOK
TOGIAK
LEVELOCK
DILLINGHAM
Kvichak River
MANOKOTAK
CLARKS POINT
PORTAGE CREEK
NAKNEK
BRISTOL BAY BOROUGH
EKUK
SOUTH NAKNEK
ALEUTIAN RA
BRISTOL BAY
EGEGIK
Becharof Lake
PILOT POINT

FIGURE IV - 72

LOCATABLE & LEASABLE RESOURCES

BRISTOL BAY REGION

Minerals
- ◐ Deposit
- ● Mine (recorded production)
- ○ Prospect or occurrence

- ⬭ Oil & Gas Potential
- ◑ Bituminous Rock, extent unknown
- ⬭ Federal Oil & Gas Leases

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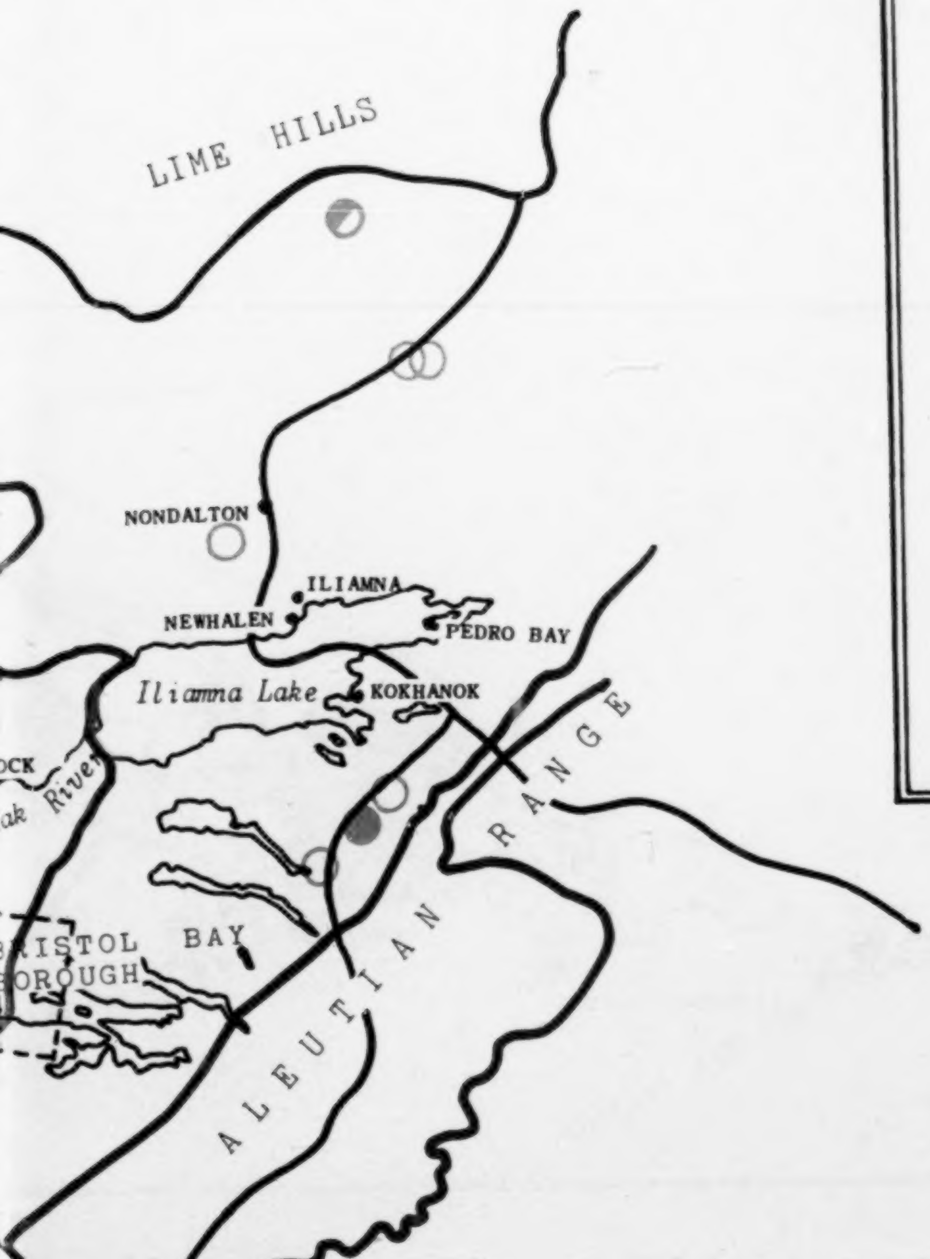
From all authoritative sources



LIME HILLS
NONDALTON
ILIAMNA
NEWHALEN
PEDRO BAY
Iliamna Lake
KOKHANOK
OCK
ak River
RISTOL BAY
OROUGH
ALEUTIAN RANGE
50
0
50 MILES

FIGURE IV - 72

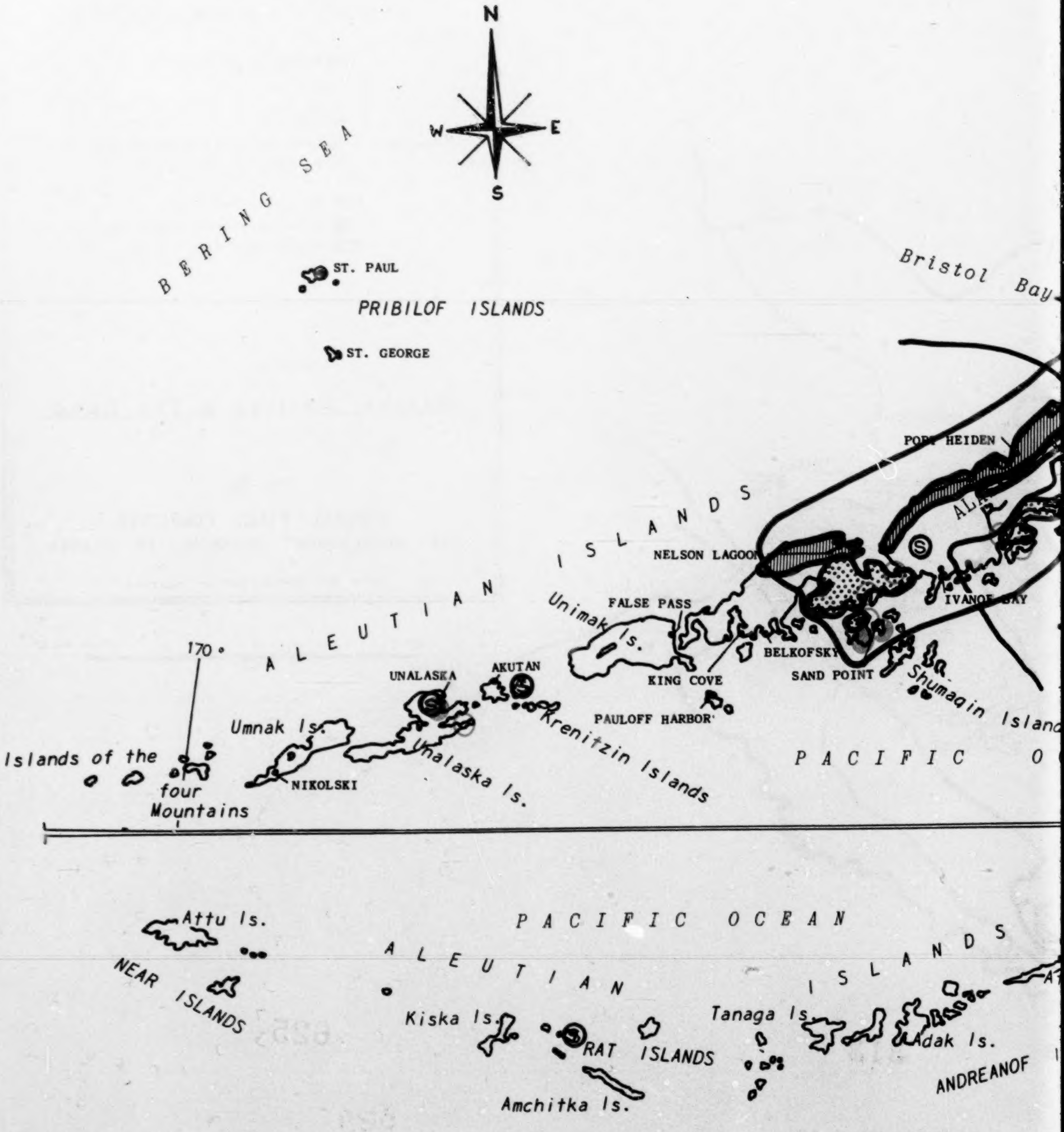
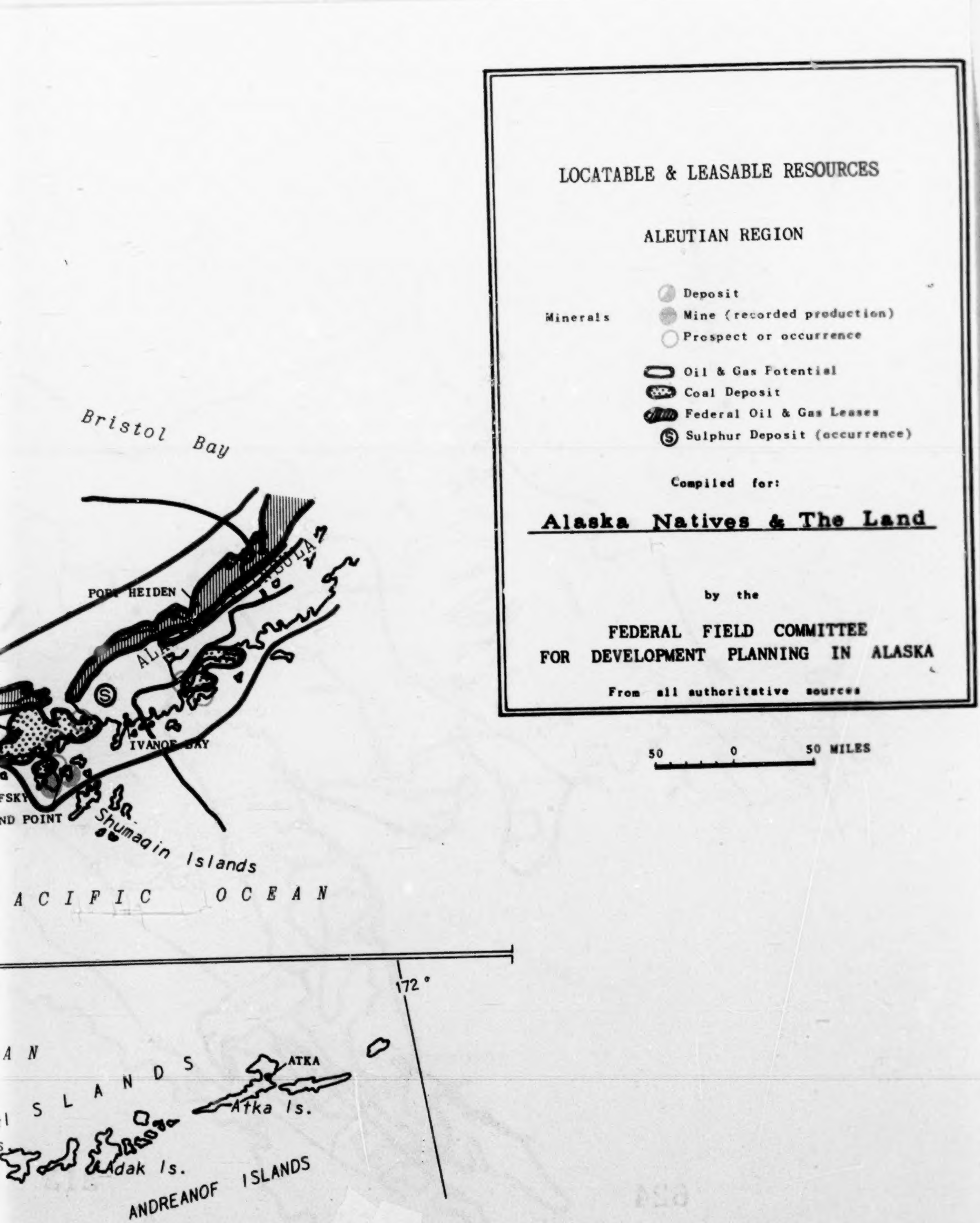

N
W
E
S
BERING SEA
ST. PAUL
PRIBILOF ISLANDS
ST. GEORGE
Bristol Bay
PORT HEIDEN
ALEUTIAN ISLANDS
NELSON LAGOON
FALSE PASS
Unimak Is.
IVANOF BAY
170°
BELKOFSKY
SAND POINT
UNALASKA
AKUTAN
KING COVE
Shumagin Islands
PAULOFF HARBOR
Umnak Is.
Krenitzin Islands
Islands of the four Mountains
Unalaska Is.
NIKOLSKI
PACIFIC O
PACIFIC OCEAN
Attu Is.
NEAR ISLANDS
ALEUTIAN ISLANDS
Kiska Is.
Tanaga Is.
Adak Is.
RAT ISLANDS
ANDREANOF
Amchitka Is.

FIGURE II - 73


Minerals
Deposit
Mine (recorded production)
Prospect or occurrence
Oil & Gas Potential
Coal Deposit
Federal Oil & Gas Leases
Ⓢ Sulphur Deposit (occurrence)
50 0 50 MILES
Bristol Bay
PORT HEIDEN
IVANOF BAY
FSKY
ND POINT
Shumagin Islands
ACIFIC OCEAN
172°
AN
ISLANDS
ATKA
Atka Is.
Adak Is.
ANDREANOF ISLANDS

LOCATABLE & LEASABLE RESOURCES

ALEUTIAN REGION

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From all authoritative sources

FIGURE II - 73

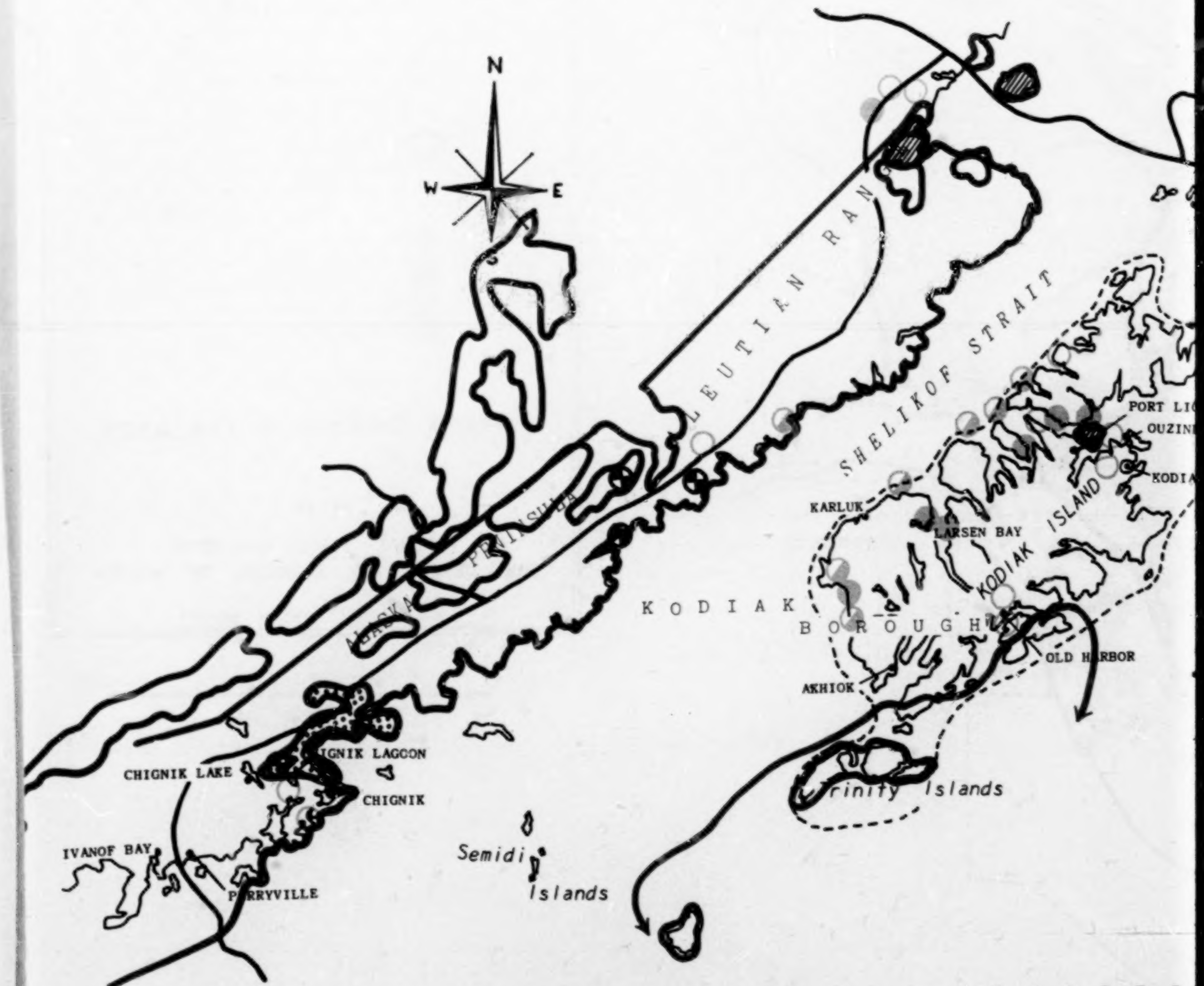
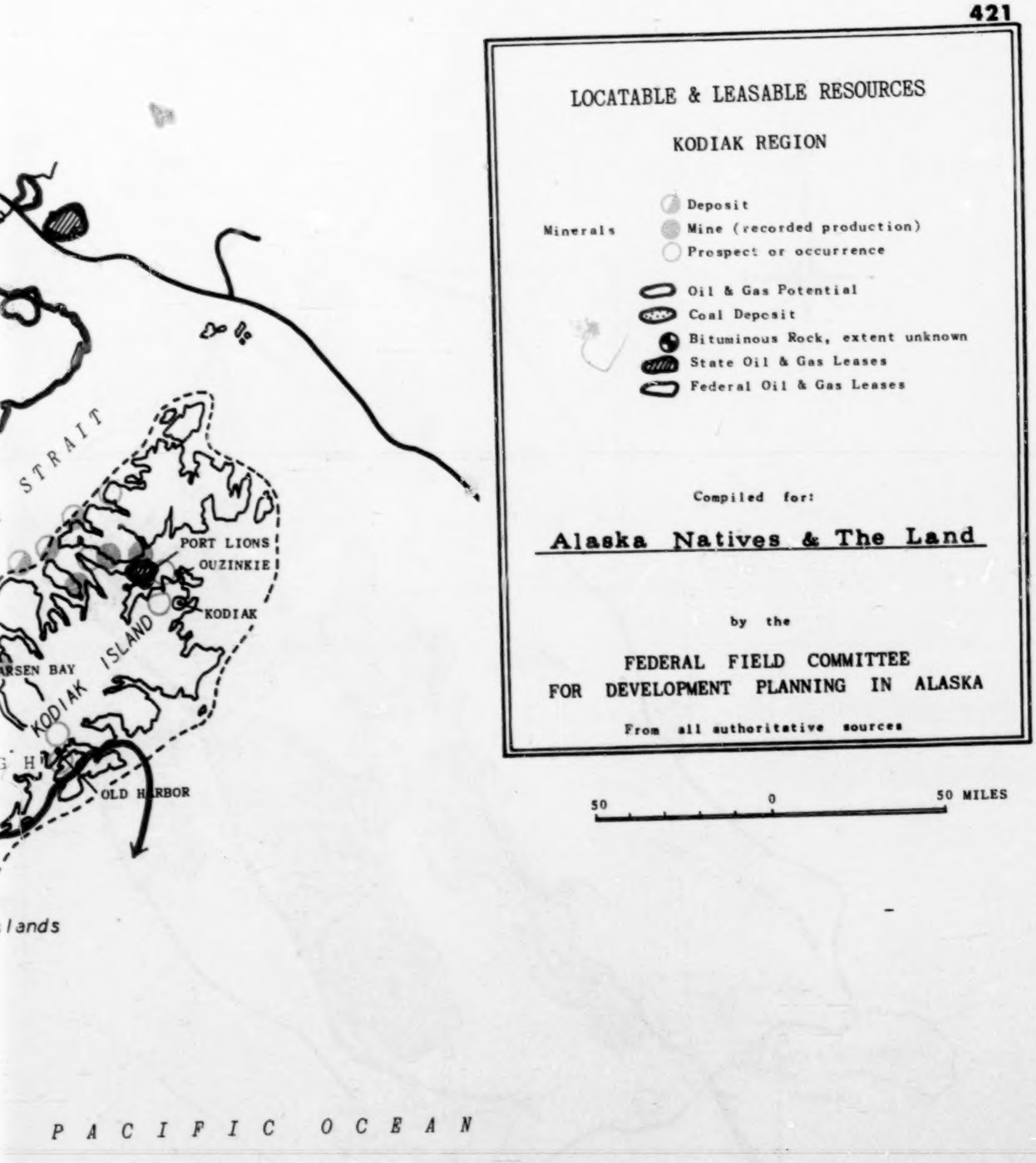

N
W
E
S
LEUTIAN RAN
SHELIKOF STRAIT
ALASKA PENINSULA
PORT LI
OUZIN
KODIA
KARLUK
LARSEN BAY
KODIAK ISLAND
KODIAK BOROUGH
OLD HARBOR
AKHIOK
Trinity Islands
CHIGNIK LAGOON
CHIGNIK LAKE
CHIGNIK
IVANOF BAY
PERRYVILLE
Semidi Islands
PACIFI

FIGURE IV - 74


Deposit
Minerals
Mine (recorded production)
Prospect or occurrence
Oil & Gas Potential
Coal Deposit
Bituminous Rock, extent unknown
State Oil & Gas Leases
Federal Oil & Gas Leases
STRAIT
PORT LIONS
OUZINKIE
KODIAK
KODIAK ISLAND
RSEN BAY
OLD HARBOR
50
0
50 MILES
lands
PACIFIC OCEAN

LOCATABLE & LEASABLE RESOURCES

KODIAK REGION

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From all authoritative sources

FIGURE IV - 74

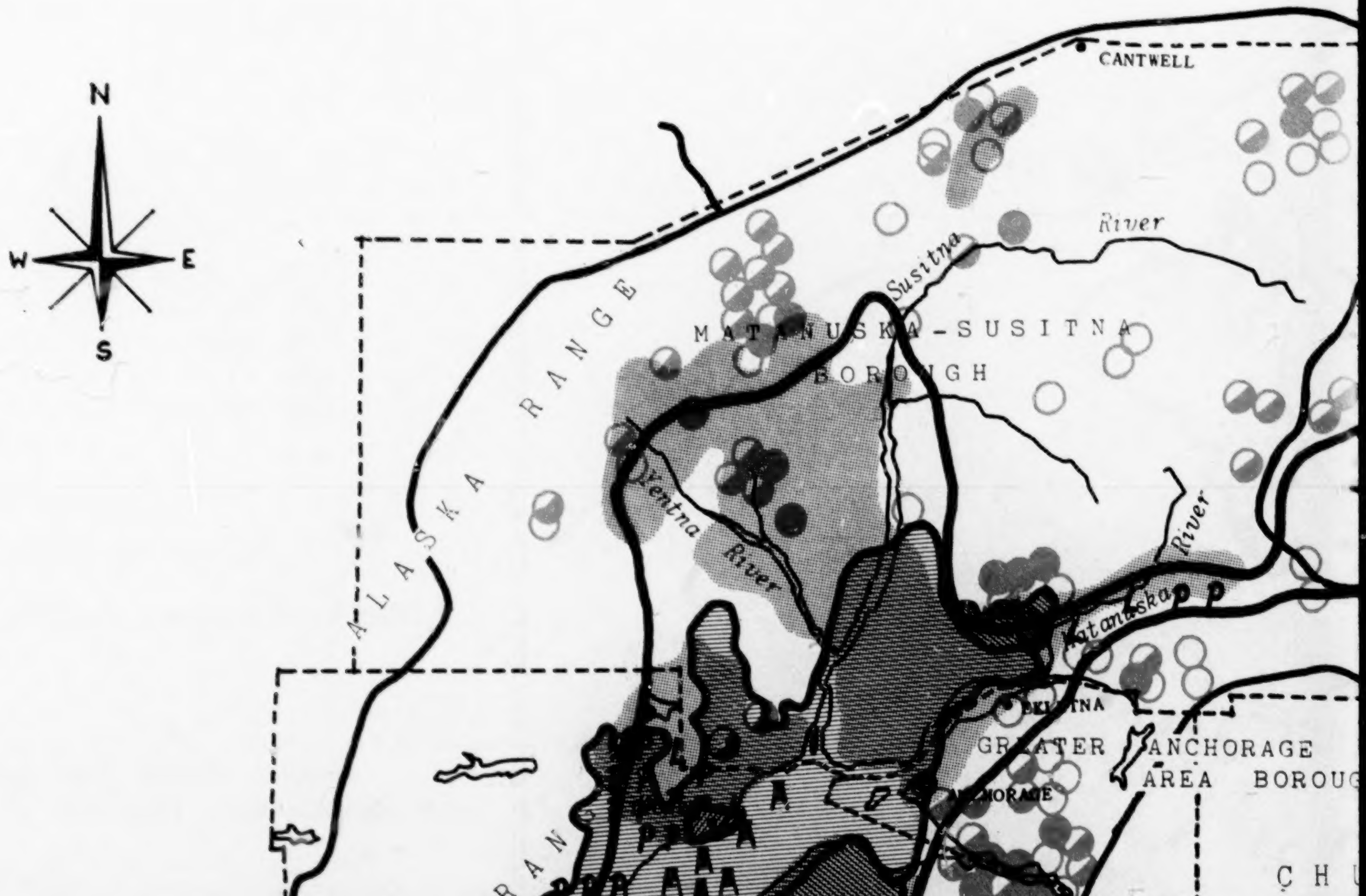
N
W
E
S
CANTWELL
River
Susitna
MATANUSKA-SUSITNA
BOROUGH
ALASKA RANGE
Yentna
River
Matanuska
River
EKLUTNA
GREATER ANCHORAGE
AREA BOROUG
ANCHORAGE
CHU
MOU
ALEUTIAN RANGE
KENAI PENINSULA
COOK INLET
KENAI PENINSULA
Lake Clark
Tustumena
Lake
PEDRO BAY
Iliamna Lake
KOKHANOK
ENGLISH BAY
PORT GRAHAM

FIGURE IV - 75

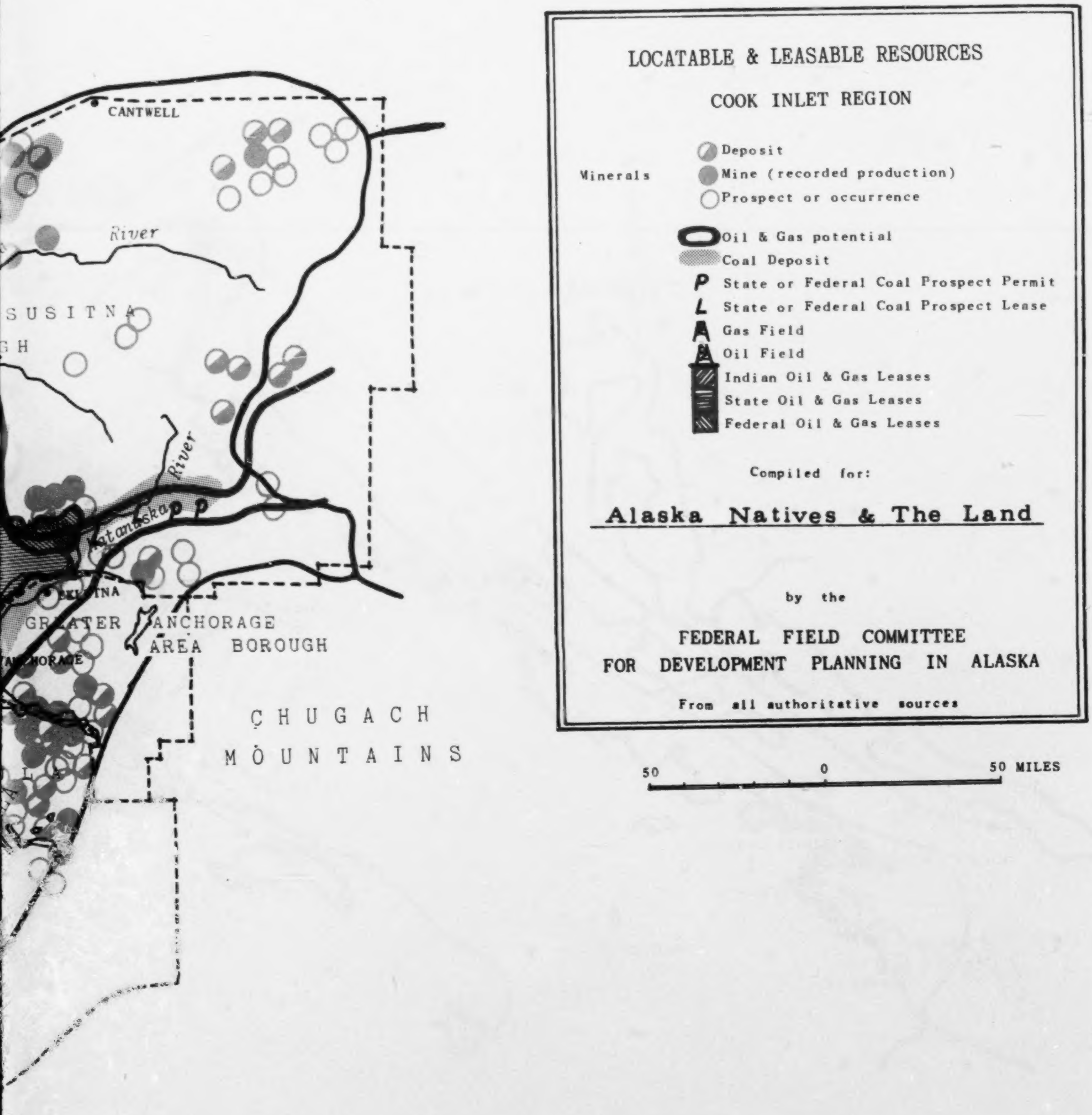
LOCATABLE & LEASABLE RESOURCES
COOK INLET REGION
Minerals
Deposit
Mine (recorded production)
Prospect or occurrence
Oil & Gas potential
Coal Deposit
P State or Federal Coal Prospect Permit
L State or Federal Coal Prospect Lease
Gas Field
Oil Field
Indian Oil & Gas Leases
State Oil & Gas Leases
Federal Oil & Gas Leases
Compiled for:
Alaska Natives & The Land
by the
FEDERAL FIELD COMMITTEE
FOR DEVELOPMENT PLANNING IN ALASKA
From all authoritative sources
50
0
50 MILES
CANTWELL
River
SUSITNA
GH
River
Matanuska
P P
EKLUTNA
GREATER ANCHORAGE
AREA BOROUGH
ANCHORAGE
CHUGACH
MOUNTAINS

FIGURE IV - 75

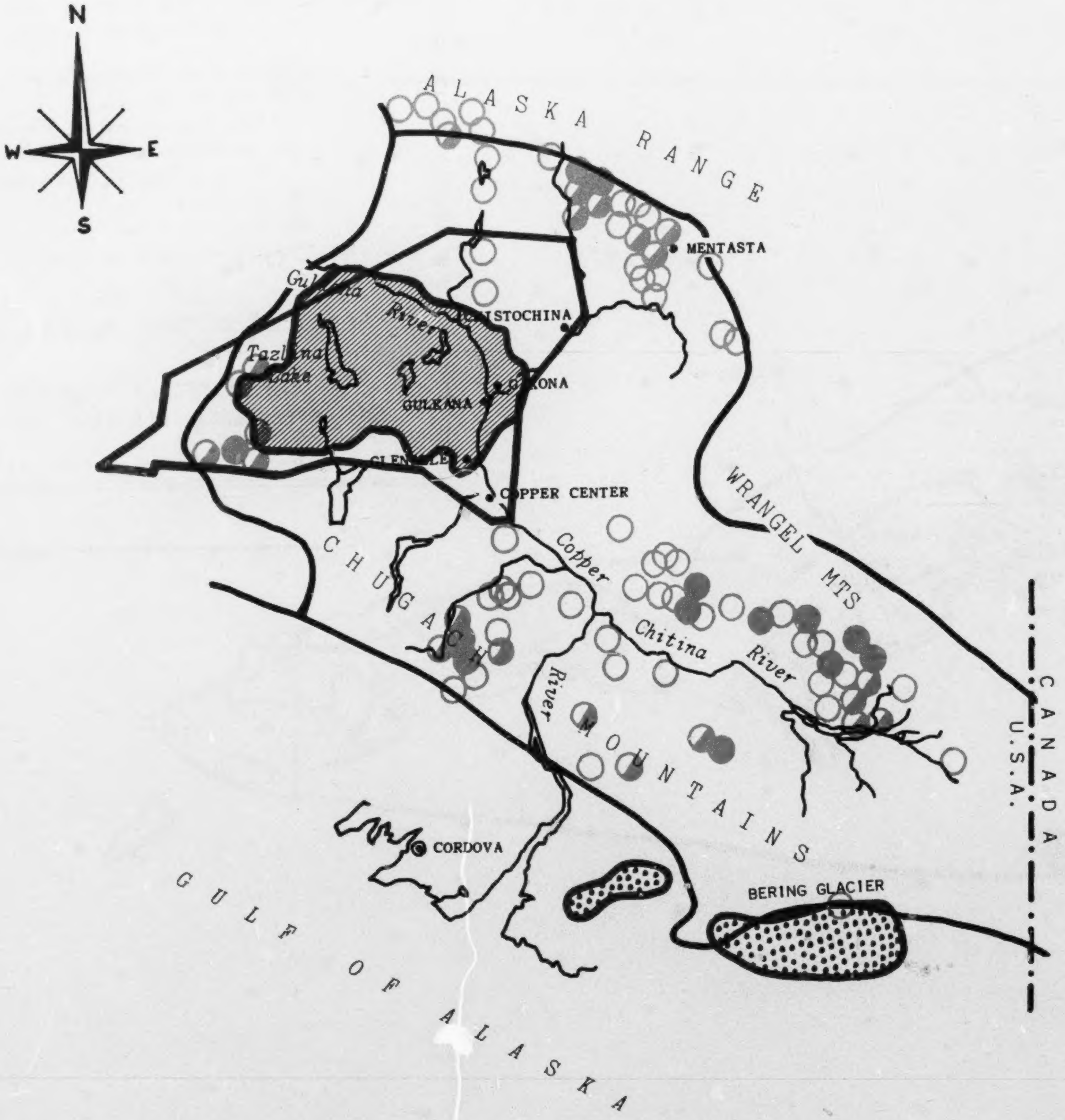
N
W
E
S
ALASKA RANGE
MENTASTA
Gulkana River
CHISTOCHINA
Tazlina Lake
GAKONA
GULKANA
GLENNALLEN
COPPER CENTER
WRANGEL MTS
CHUGACH MOUNTAINS
Copper River
Chitina River
CANADA
U.S.A.
CORDOVA
BERING GLACIER
GULF OF ALASKA

FIGURE IV - 76

LOCATABLE & LEASABLE RESOURCES

COPPER RIVER REGION

Minerals	◐	Deposit
	●	Mine (recorded production)
	○	Prospect or occurrence
	▭	Oil & Gas Potential
	▒	Coal Deposit
	▨	Federal Oil & Gas Leases

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Alaska Natives & The Land

by the

**FEDERAL FIELD COMMITTEE
FOR DEVELOPMENT PLANNING IN ALASKA**

From all authoritative sources

50 0 50 MILES

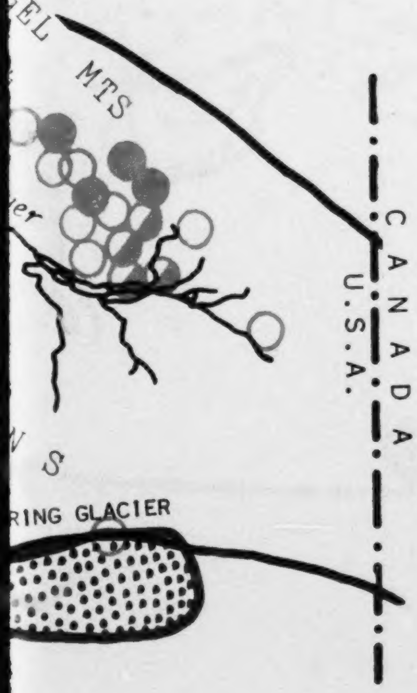
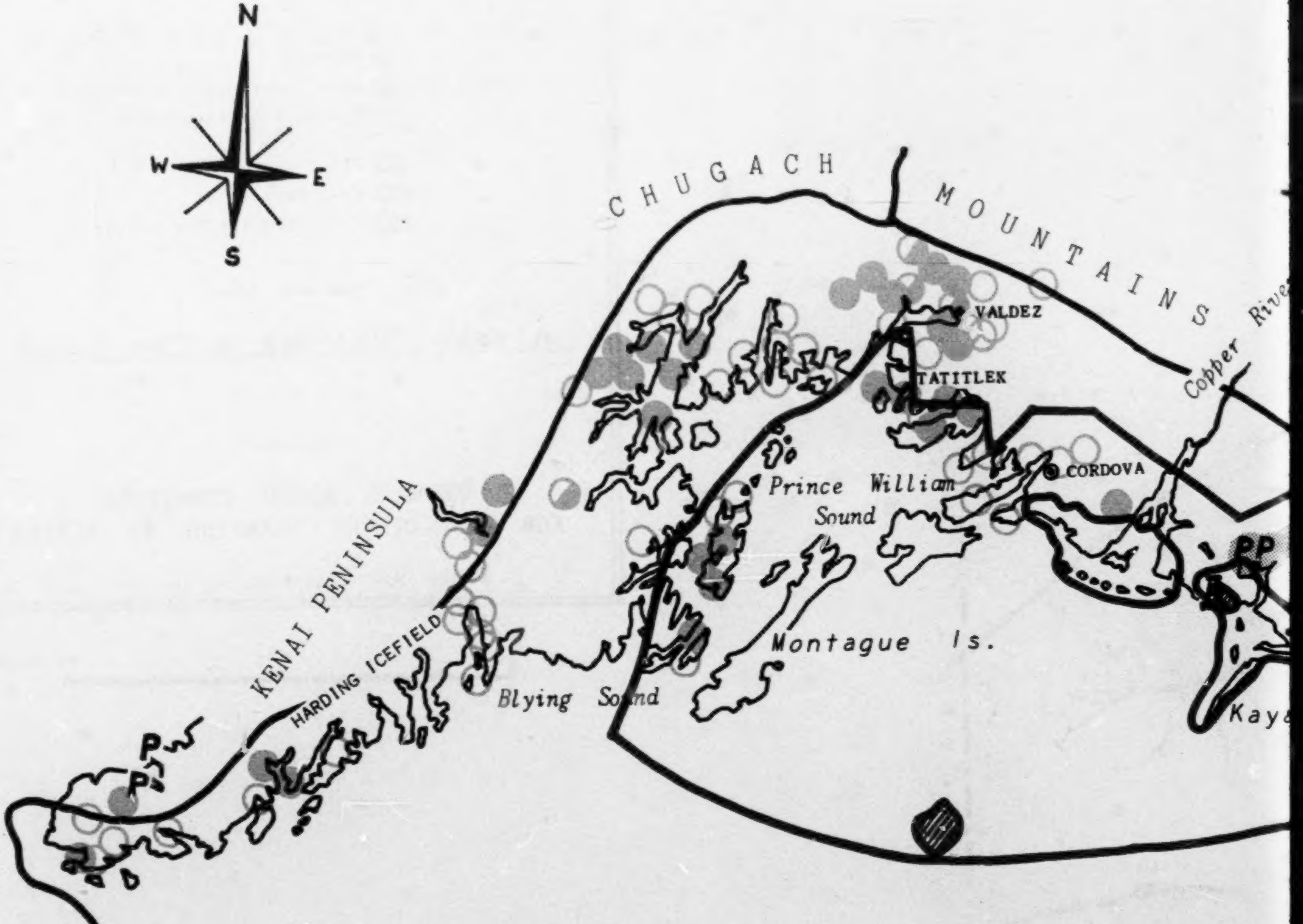


FIGURE IV - 76


N
W
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CHUGACH MOUNTAINS
VALDEZ
TATITLEK
CORDOVA
Copper Rive
Prince William Sound
Montague Is.
Blying Sound
HARDING ICEFIELD
KENAI PENINSULA
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P
P
PP

FIGURE IV - 77

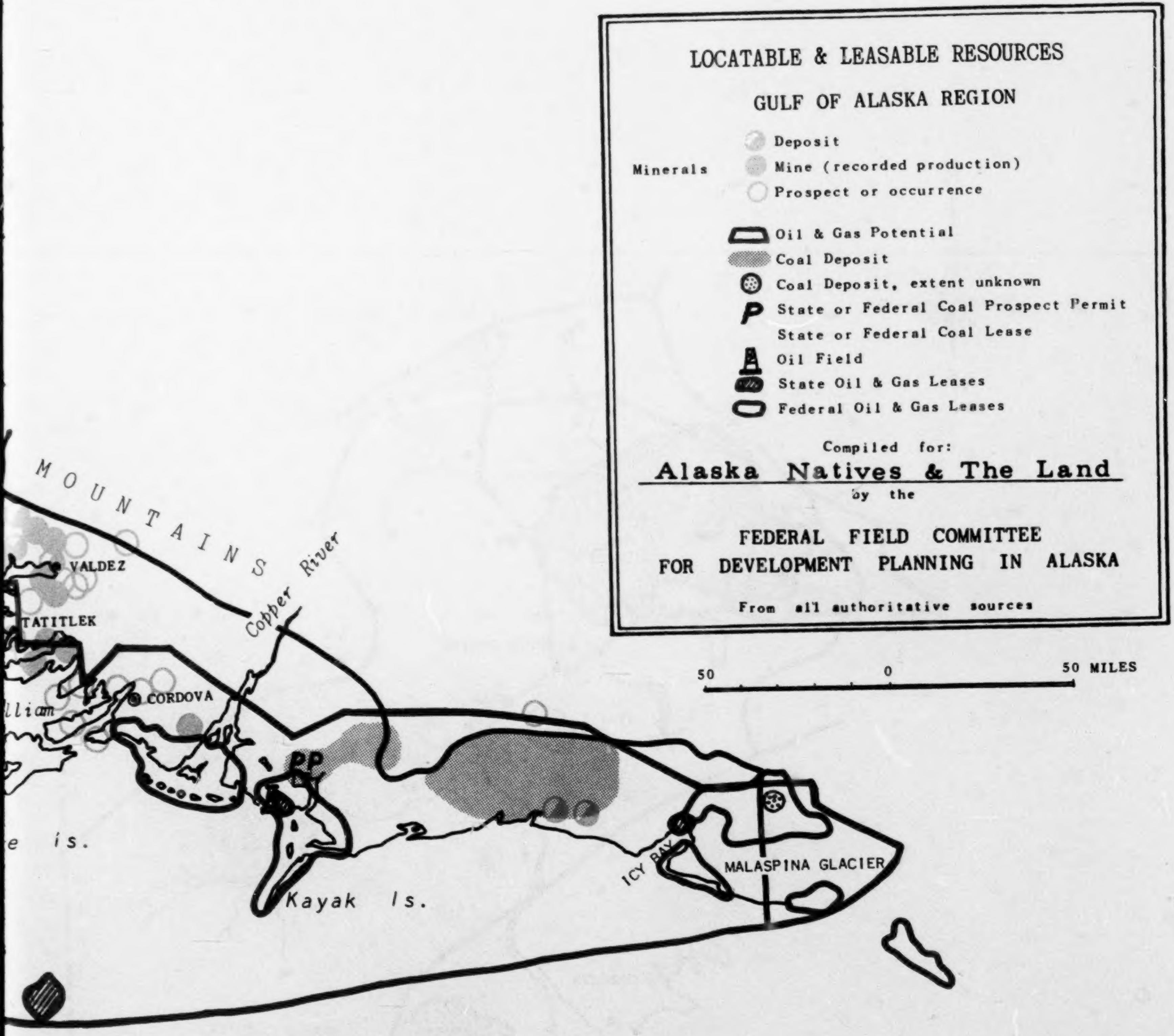

LOCATABLE & LEASABLE RESOURCES
GULF OF ALASKA REGION
Minerals
Deposit
Mine (recorded production)
Prospect or occurrence
Oil & Gas Potential
Coal Deposit
Coal Deposit, extent unknown
P State or Federal Coal Prospect Permit
State or Federal Coal Lease
Oil Field
State Oil & Gas Leases
Federal Oil & Gas Leases
Compiled for:
Alaska Natives & The Land
by the
FEDERAL FIELD COMMITTEE
FOR DEVELOPMENT PLANNING IN ALASKA
From all authoritative sources
50
0
50 MILES
MOUNTAINS
VALDEZ
TATITLEK
Copper River
CORDOVA
lliam
PP
e is.
Kayak Is.
ICY BAY
MALASPINA GLACIER

FIGURE IV · 77

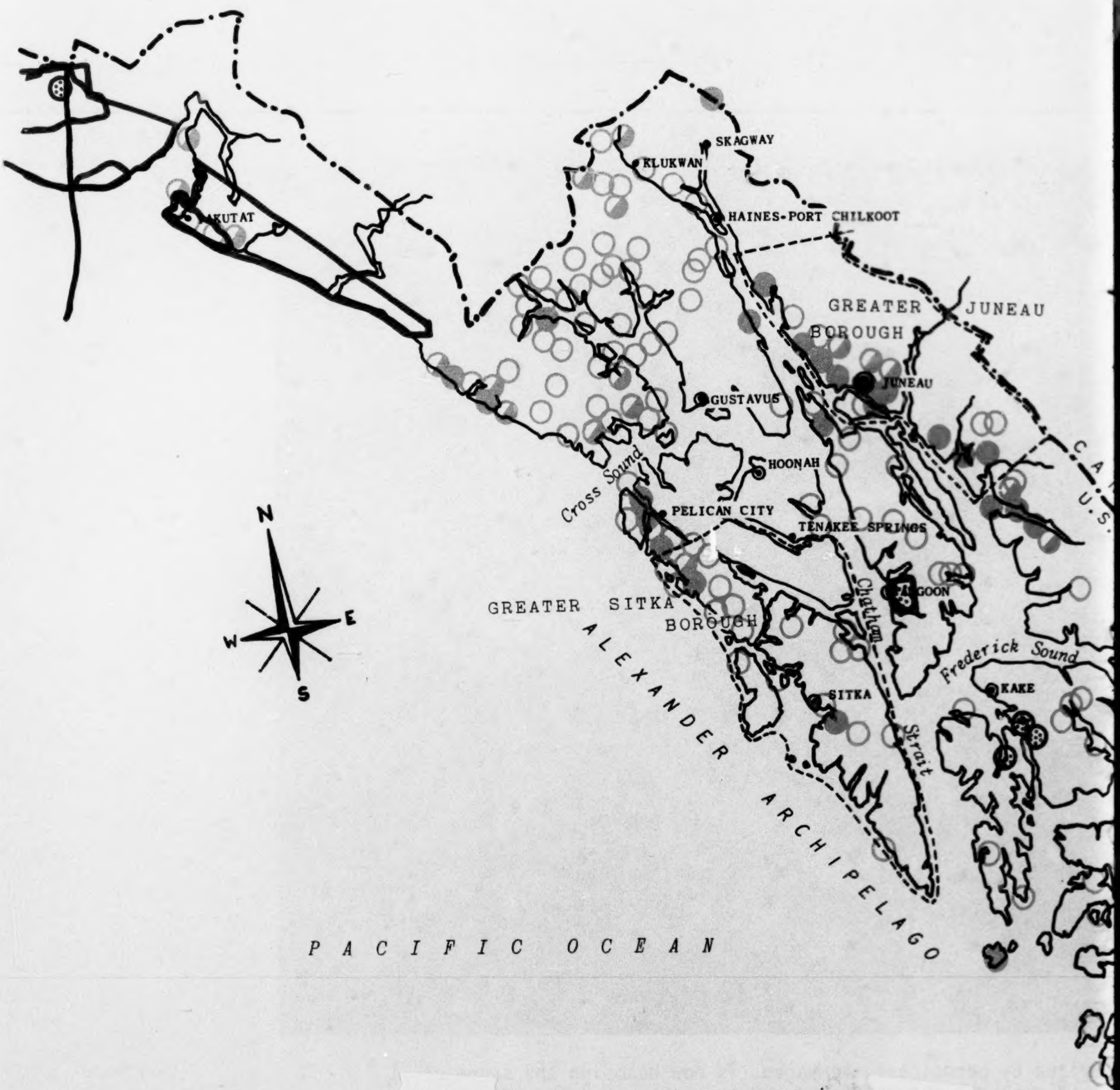
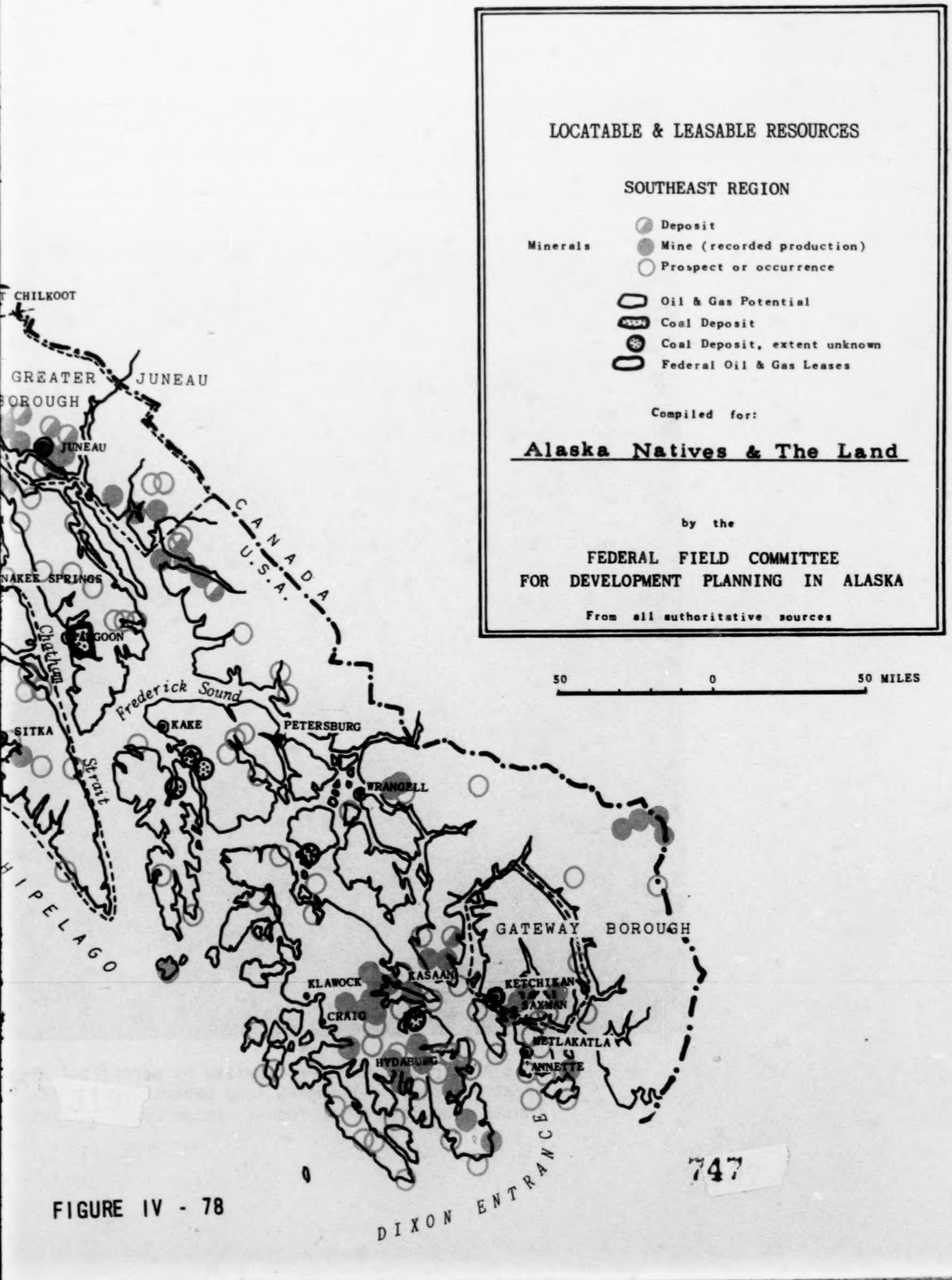

SKAGWAY
KLUKWAN
HAINES-PORT CHILKOOT
GREATER JUNEAU BOROUGH
JUNEAU
AKUTAT
GUSTAVUS
HOONAH
Cross Sound
PELICAN CITY
TENAKEE SPRINGS
CA
U.S.
GOON
Chatham Strait
Frederick Sound
KAKE
GREATER SITKA BOROUGH
SITKA
ALEXANDER ARCHIPELAGO
PACIFIC OCEAN
N
E
W
S

FIGURE IV - 78



LOCATABLE & LEASABLE RESOURCES

SOUTHEAST REGION

Compiled for:

Alaska Natives & The Land

by the

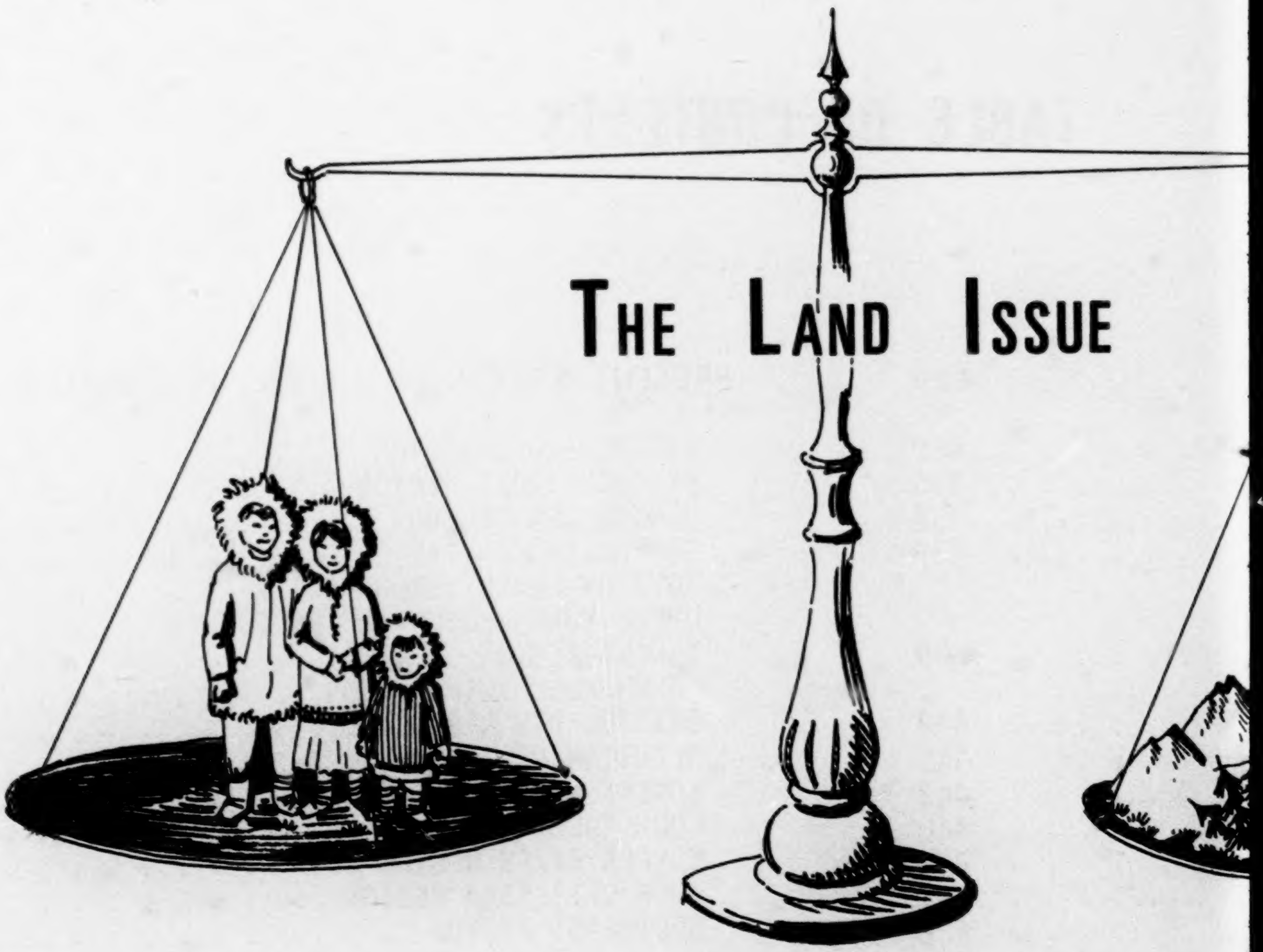
FEDERAL FIELD COMMITTEE
FOR DEVELOPMENT PLANNING IN ALASKA

From all authoritative sources

Minerals
Deposit
Mine (recorded production)
Prospect or occurrence
Oil & Gas Potential
Coal Deposit
Coal Deposit, extent unknown
Federal Oil & Gas Leases
50
0
50 MILES
CHILKOOT
GREATER JUNEAU
BOROUGH
JUNEAU
CANADA
U.S.A.
NAKEE SPRINGS
ANGOON
Chatham
Frederick Sound
SITKA
Strait
KAKE
PETERSBURG
WRANGELL
HIPELAGO
GATEWAY BOROUGH
KLAWOCK
KASAAN
KETCHIKAN
SAXMAN
CRAIG
METLAKATLA
HYDABURG
ANNETTE
DIXON ENTRANCE

FIGURE IV - 78

THE LAND ISSUE



CHAPTER V

LAND ISSUE

Esther C. Wunnicke

CHAPTER V

TABLE OF CONTE

HISTORY: REVIEW OF LAWS AND POLICY **429**

THE DISTRICT OF ALASKA, 1867-1912 430
THE TERRITORY OF ALASKA, 1912-1941 435
THE TERRITORY OF ALASKA, 1941-1958 437
STATEHOOD 439

PRESENT STATUS OF LANDS: STATEWIDE **442**

PUBLIC DOMAIN 442
FEDERAL RESERVE (WITHDRAWN) AREAS 443
NATIVE RESERVES 443
WILDLIFE RESERVES 446
PATENTED LANDS 448
ALASKA NATIVE ALLOTMENT ACT 451
NATIVE TOWNSITES 452
CLAIMS, ENTRIES AND SELECTIONS 452

PRESE

ARCT
BERI
BERI
SOUT
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UPPE
TANA
UPPE
BRIS
ALEU
KODI
COOK
COPP
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Grateful acknowledgment is made to Mr. Theodore G. Bingham, Chief of the Divi Management, for his invaluable contributions to the text and technical material. A maj tion was furnished by the Alaska State Office of the Bureau of Land Management, and oth Affairs, Juneau Area Office. Acknowledgment is made particularly to Mr. Charles Jones, are those of the staff of the Federal Field Committee and do not necessarily reflect th

CHAPTER V

TABLE OF CONTENTS

. . . **429**
. . . 430
. . . 435
. . . 437
. . . 439

. . . **442**
. . . 442
. . . 443
. . . 443
. . . 446
. . . 448
. . . 451
. . . 452
. . . 452

PRESENT STATUS OF LANDS: REGIONALLY **454**
- ARCTIC SLOPE REGION 456
- BERING STRAIT REGION 460
- BERING SEA REGION 464
- SOUTHWEST COASTAL LOWLAND REGION 468
- KOYUKUK-LOWER YUKON REGION 472
- UPPER YUKON-PORCUPINE REGION 476
- TANANA REGION 480
- UPPER KUSKOKWIM REGION 484
- BRISTOL BAY REGION 488
- ALEUTIAN REGION 492
- KODIAK REGION 496
- COOK INLET REGION 500
- COPPER RIVER REGION 504
- GULF OF ALASKA REGION 508
- SOUTHEAST REGION 512

THE LAND CONFLICT **515**

Bingham, Chief of the Division of Lands and Minerals, Alaska State Office of the Bureau of Land technical material. A major part of all statistical data and data for cartographic reproduc- of Land Management, and other important data and reports were furnished by the Bureau of Indian larly to Mr. Charles Jones, Realty Officer. Any conclusions or inferences in the text, however, not necessarily reflect those of contributing agencies or individuals.

THE LAND ISSUE

HISTORY: REVIEW OF LAWS AND POLICY

Some of the difficult land questions in Alaska were faced in other public land states fifty or one hundred years ago. Some are current questions in all of the public land states. One problem, however, is unique to this time and place--the problem of Alaska Native land claims.

Although Alaska was purchased from Russia a century ago, it became a state only ten years ago, and aboriginal inhabitants--Eskimos, Aleuts, and Indians--make up one-fifth of the population today. Until thirty years ago, Native residents outnumbered non-Native residents. There were coastal commercial settlers (both Russian and American), whalers, fishermen, trappers, and late nineteenth century gold seekers. Other permanent settlers began to come to Alaska in increasing numbers during and after World War II. This influx of non-Native settlers, the prospect of economic development of Alaska's resources, and statehood accelerated the confrontation of Native and non-Native in determining the ownership and use of the land.

The laws which were passed in the conterminous United States to solve Indian land problems were written without broad knowledge of Alaska. Many of them were outgrown long before the need for them arose in Alaska. Thus, for many reasons Alaska did not and cannot repeat the experience of the western states. In the West most Indian lands were taken or conveyed as the result of treaty and force of arms. Indian tribes were treated as dependent nations possessed of certain rights, sovereignty and property, yet requiring special governmental protection.[1] But within four years after the purchase of Alaska, and before any civil government had been extended to the area, Congress had forbidden any further treaty making with aboriginal tribes.[2] As further complication, recognizable tribes, as understandable in the rest of the United States, were not easily determined.

Alaska did not become a possession of the United States until eighty years after the United States policy toward Indians found expression in the Northwest Ordinance of 1787. Legal historians have traced this policy to its roots in the doctrine of Vitoria, a 16th century Spanish Jesuit who, as a professor of theology, reasoned that certain basic rights inhere in men as men, not by reason of their

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[2] Act of M
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[3] Felix S.
Law of the Uni
[4] *Ibid.*, q
[5] Theodore
1887 to 1957,"
of War in 1826
Affairs, 19th

E LAND ISSUE

race, creed or color, but by reason of their humanity.[3] The Northwest Ordinance provided:

> The utmost good faith shall always be observed towards the Indians; their lands and property shall never be taken from them without their consent; and in their property rights and liberty they never shall be invaded or disturbed, unless in just and lawful wars authorized by Congress.[4]

That such a policy was honored in the breach more often than not appeared in testimony as early as 1825 before the House Committee on Indian Affairs:

> From the first discovery of America to the present time, one master passion common to all mankind, that of acquiring land, has driven in ceaseless succession, the white man on the Indian.[5]

From 1799 to 1867 Russian Alaska was governed by the Russian American Company. The original charter issued by the Russian government in 1799 to the Russian American Company contained no provisions covering the status of the Natives of Alaska, or the land used and inhabited by the Natives. It provided:

---

[1] W. C. Arnold, *Native Land Claims in Alaska,* mimeo, p. xvi, January, 1967.

[2] Act of March 3, 1871, 16 Stat. 544. The Act declares: "no tribe or nation within the territory of the United States shall be acknowledged or recognized as an independent nation, or power with which the United States may contract by treaty; but no obligation of any treaty lawfully made and ratified...prior to March 3, 1871, shall be therefore invalidated or impaired."

[3] Felix S. Cohen, "The Spanish Origin of Indian Rights in the Law of the United States," *The Georgetown Law Journal,* November, 1942.

[4] *Ibid.,* quoting the Northwest Ordinance of 1787.

[5] Theodore H. Haas, "The Legal Aspects of Indian Affairs from 1887 to 1957," *Annals,* May, 1957, quoting James Barbour, Secretary of War in 1826 to the Chairman of the House Committee on Indian Affairs, 19th Congress, 1st Session, 1825.

> Sec. 57: The principal object of the Company being the catching of the sea animals and wild beasts, the Company has no need to spread its rule from the coast where it practices such catchings, into the interior of the country, *and it should not make effort to conquer tribes inhabiting these coasts.*[6]

A later charter in 1844 provided:

> Sec. 281: The colonial government shall not forcibly extend the possessions of the Company in regions inhabited by tribes not dependent on the colonial authorities.[7]

Long before the purchase of Alaska, however, American traders had been interested in Alaska, and from 1824 to 1834 a right to trade with the Natives was given to Americans by treaty. Subsequently, in 1839 the Russian American Company, with the approval of the Russian government, leased to the Hudson's Bay Company the exclusive right of trading on the coast of southeastern Alaska--an arrangement which continued until the sale of Alaska to the United States.[8]

The District of Alaska, 1867-1912

The Treaty of March 30, 1867,[9] culminated many years of negotiation. Articles III and IV of the Treaty are usually included in any discussion of aboriginal land rights. Some of the residents of Russian America were, of course, colonists of Russian descent; some were Native, usually Aleut, who had become part of the colony through indenture or marriage, and others were Natives who were partially or wholly independent of the colony. These were distinctions that Article III sought to explain in its provisions respecting property:

> The inhabitants of the ceded territory, according to their choice, reserving their natural allegiance, may return to Russia within three years; but if they should prefer to remain in the ceded territory, they, *with the exception of uncivilized Native tribes*, shall be admitted to the enjoyment of all the rights, advantages, and immunities of citizens of the United States, and shall be maintained and protected in the free enjoyment of their liberty, property and religion. *The uncivilized tribes will be subject to such laws and regulations as the United States may, from time to time, adopt in regard to aboriginal tribes of that country*.[10] (emphasis added)

Article IV was added as the result of Secretary Seward's fear that the property rights of either the Russian American Company or the Hudson's Bay Company might somehow be guaranteed.[11] This is the "warranty deed" clause for which the United States paid an additional $200,000 and which is often spoken of as extinguishing "Indian title" in Alaska:

> The cession of territory and dominion herein made is hereby declared to be free and unencumbered by any reservations, privileges, franchises, grants, or possession, *by any associated companies*, whether corporate or incorporate, Russian or any other, or by any parties, except merely private and individual property holders; and the cessation hereby made, conveys all the rights, franchises, and privileges now belonging to Russia in the said territory or dominion, and appurtenances thereto.[12] (emphasis added)

The United States was slow to extend its laws to the new possession, and for the first ten years--from 1867 to 1877--administration was in the War Department. By the Act of July 27, 1868, the laws relating to commerce and navigation and creation of Alaska as a customs district were passed. "In due course, the people in southeast Alaska came to look upon the records in the customs office as evidence of their title to lands..."[13] Land rights and titles for all residents were undefined, and concern was expressed particularly about the decision of Congress to no longer treat with Indian tribes. The 1872 *Annual Report* of the Commissioner of Indian Affairs asks:

> What is to become of the rights of the Indians to the soil, over portions of territory which had not been covered by treaties at the time Congress put an end to the treaty system?....*How are Indians, never yet treated with*, but having every way as good and as complete rights to portions of our territory as had the Cherokees, Creeks, Choctaws, and Chickasaws, for instance....*to establish their rights*? How is the

---

[6] *The Tlingit and Haida Indians of Alaska v. The United States*, Court of Claims, No. 47900, decided October 7, 1959, Findings of Fact No. 16.

[7] *Ibid.*

[8] *Ibid.*, Findings of Fact No. 19.

[9] 15 Stat. 539, ratified May 20, 1867.

[10] *Ibid.*, Article III.

[11] *The Tlingit and Haida Indians of Alaska v. the United States*, *supra*, Findings of Fact No. 58.

[12] Act of March 30, 1867, 15 Stat. 539, Article IV.

[13] *The Tlingit and Haida Indians of Alaska v. The United States*, *supra*, Findings of Fact No. 69.

> Government to proceed to secure their relinquishment of their lands, or to determine the amount of compensation which should be paid therefor? *Confiscation*, of course, *would afford a very easy solution* for all the difficulties of title, *but it may fairly be assumed that the United States Government will scarcely be disposed to proceed so summarily in the face of the unbroken practice of eighty-five years, witnessed in nearly four hundred treaties solemnly ratified by the Senate....*[14] (emphasis added)

Less than 300 whites--all but 30 of whom lived in Sitka--made up the non-Native population in 1880. They posed little threat to Indian lands; and until the arrival of the first governor in September, 1884, the only civil authority was that exercised along with their military authority by Naval commanders.

In the continental United States eagerness for lands in the West was already building toward national expressions of policy which would lead to the General Allotment Act of 1887.[15] The General Allotment Act had as its ostensible objective:

> ....to encourage the Indian to engage in farming by breaking up the reservation, thus civilizing him and ridding our nation of the burden and blight of the "Indian problem."[16]

Meanwhile, no land laws of the United States were extended to Alaska until the Organic Act of 1884.[17] The Act established Alaska as a *land district* and provided that the laws of the United States relating to *mining claims* were to have full force and effect. With respect to the Indians and other Natives inhabiting Alaska, it provided in Section 8:

> ....That the Indians or other persons in said district shall not be disturbed in the possession of any lands actually in their use or occupation or now claimed by them but the terms under which such persons may acquire title to such lands is reserved for future legislation by Congress....[18]

At the same time the Act also provided that mining claimants should not be disturbed in their possession and would be allowed to perfect their titles. The phrase "or now claimed by them" was added to the portion on Indians at the request of legislators who, aware of their lack of knowledge of Alaska, desired "....that the Indian shall at least have as many rights after the passage of this bill as he had before."[19]

The Senate report on the proposed Organic Act cautioned against opening up all of the lands by stating:

> Another reason against present action on this subject is found in the fact that the rights of the Indians to the land, or some necessary part of it, have not yet been the subject of negotiation or inquiry. It would be obviously unjust to throw the whole district open to settlement under our land laws until we are advised what just claim the Indians may have....[20]

Section 12 of the Act provided for a special Commission:

> to examine into and report upon the conditions of the Indians residing in said Territory, what lands, if any, should be reserved for their use, what provisions shall be made for their education, what rights by occupation of settlers should be recognized....[21]

---

[14] William E. Warne, Assistant Secretary of the Interior, "Statement Before the Senate Committee on Interior and Insular Affairs," February 24, 1948, p. 15, quoting 1872 *Annual Report of the Commissioner of Indian Affairs*.

[15] Act of February 8, 1887, 24 Stat. 388.

[16] Robert F. Kennedy, testimony in hearings on *S. Con. Res. 11, National American Indian and Alaska Natives Policy Resolution*, before the Subcommittee on Indian Affairs, Senate Committee on Interior and Insular Affairs, March 5, 1968, p. 24.

[17] Act of May 17, 1884, 23 Stat. 24.

[18] *Ibid.*, Section 8. The phrase originally read: "any lands actually in their use or occupation."

[19] 15 Cong. Rec. 530-531, quoted in the Statement of Assistant Secretary Warne, *supra*.

[20] *Ibid.*

[21] Section 12, Act of May 17, 1884, 23 Stat. 24.

The Commission recommended in its report to the Secretary of the Interior on June 30, 1885--a report which covered *only southeast* Alaska:

> The General Land Laws of the United States should be extended over the Territory as early as possible. *The Natives claim only the land on which their homes are built and some garden patches near their villages* ....(and)....We believe it the interest of the General Government to encourage by liberal enactments the occupation of the country by bona fide settlers that will open and develop its resources....[22] (emphasis added)

This was a view reiterated by the first three governors of the state. It echoed the national policy of the General Allotment Act designed to create individual allotments out of reservation lands.[23] With no reservations in Alaska, there was no need for the act to be extended to the district.

As the white man's uses of the waters and lands of southeast Alaska grew steadily more substantial and interfered with Indian uses, the Indians protested. Letters were written to the Secretary of the Interior concerning encroachment on Native timber, game and fishing interests, and on September 6, 1889, the Secretary replied:

> ....I have to inform you that these matters all lie outside of the control of this Department and would be proper subjects for the consideration of Congress.[24]

The Tlingit and Haida Indians finally asked for a reservation. Their pleas were ignored. Advocacy of the submersion of the varied cultures of immigrants into an American way of life was arising. To attain this conformity it was, of course, also necessary to destroy Indian cultures. This was the keystone of federal Indian policy until the 1920's.[25] It was clearly stated in a six-point policy set out by the Commissioner of Indian Affairs in 1889:

> (1) The Reservation system belongs to the past, (2) Indians must be absorbed into our national life, not as Indians but as American citizens, (3) the Indian must be "individualized" and treated as an individual by the Government, (4) *the Indian must "conform to the White man's ways, peacably if they will, forceably if they must,"* (5) the Indian must be prepared for the new order through a system of compulsory education, and (6) *the traditional society of Indian groups must be broken up.*[26] (emphasis added)

There was one exception to be made to the rule--and that in Alaska. William Duncan, who was in controversy with the Church of England about this time, was seeking a new home for his colony of Christianized Tsimshian Indians then living in Canada. He was advised that, inasmuch as no land laws had been enacted for Alaska it was best that the colony go, not as a group, but as individuals, to Alaska and obtain "squatters rights" to the land. This they did in 1887. Four years later their rights were confirmed by Act of Congress when the 86,000-acre Annette Island Reservation was created:

> ....for the use of the Metlakahtla Indians, and those people known as Metlakahtlans who recently emigrated from British Columbia to Alaska, *and such other Alaska Natives as may join them*....[27] (emphasis added)

Other portions of this Act in 1891 also affected Alaska. Section 11 provided for entry by a trustee of lands settled as a town in Alaska; Sections 12 to 14 provided that trade and manufacturing sites could be purchased for $2.50 an acre; Section 16 provided for townsite entry by incorporated cities on mineral land; Sections 18 to 21 contained provisions for granting rights of way for irrigation purposes; and Section 24 authorized the President to set aside timber areas as public reserves.

The lands opened to trade and manufacturing sites excluded townsites, those containing coal or precious metals, or those lands "to which the Natives of Alaska have prior rights by virtue of *actual occupation*."[28] (emphasis added)

---

[22] *The Tlingit and Haida Indians of Alaska v. The United States, supra*, Findings of Fact. No. 84.

[23] Robert F. Kennedy in testimony on *S. Con. Res. 11, supra*, quoted from the minority report on the Allotment Act of 1887 as to the true intent of the bill: "The real aim of this bill is to get at the Indian lands and open them up to settlement. The provisions for the apparent benefit of the Indian are but the pretext to get at the lands and occupy them....If this were done in the name of greed it would be bad enough, but to do it in the name of humanity, and under the cloak of an ardent desire to promote the Indian's welfare by making him like ourselves, whether he will it or not, is infinitely worse."

[24] *Tlingit and Haida v. The United States, supra*, Findings of Fact No. 104.

[25] Theodore H. Haas, *op. cit.*, p. 13.

[26] U. S. Department of the Interior, The United States Indian Service, *A Sketch of the Development of the Bureau of Indian Affairs and of Indian Policy*, May, 1962, p. 583.

[27] Act of March 3, 1891, Section 15, 26 Stat 1095.

[28] Act of March 3, 1891, *supra*, Section 14.

The governmental view of Alaska during this period was confined to Southeastern-not the first, nor the last, one-dimensional view held by those without broad knowledge of her land and people. Governor Knapp in his 1891 report epitomizes this view:

> Our statesmen of a century ago were excusable for adopting a policy toward the aborigines of the country which made the Indian tribes little less than domestic nations and the individual members of those tribes quasi foreigners, or at least having a divided allegiance. The policy was adopted under the stress of circumstances, compelling the Government to seek peaceful relations with organized bands of savages who might be useful as allies, but dangerous as enemies. That policy once fully established could not be abandoned at will, and the system and its natural sequences have ever since been continued, a fruitful source of trouble and danger, and a most perplexing problem for the Government.
>
> There is less excuse for errors of policy in dealing with the aborigines of Alaska. Their conditions are entirely different. Their habits of life are unlike the habits of the Indians of the plains. They are more intelligent, settled, and reliable. They live in fixed abodes and are accustomed to independent and self-sustaining ways. They have already made great strides toward the American civilization. The Government is not embarrassed by treaties with them or other precedents of recognition of tribal relations, and it has a fair and open field for inaugurating a system which shall yield better results than the old one.
>
> For nearly a quarter of a century of national responsibility for the welfare of the native peoples of Alaska we have neglected to fix upon a definite policy of treatment. But longer evasion is impossible. The time has come when a position must be taken.
>
> The natives consider themselves the true owners of the country, with all its accompaniments of soil, forests, streams, and navigable waters. Its game, fish, and vegetable growths are their personal property. The white man is an invader to be tolerated as a matter of necessity, or perhaps as a matter of advantage. As a conquered people they bow to the inevitable and will accept such a place in the legal structure as shall be accorded them.[29]

The Act of May 14, 1898,[30] extended the homestead laws of the United States to Alaska, and provided therein for the reservation of suitable tracts of land along the waterfront of any stream, inlet bay or seashore for "landing places for canoes and other craft used by such natives." No provision was made, however, to protect the land holdings or water rights of the Indians. Section 7 did provide that it did not apply "within military, park, Indian or other reservations," and Annette Island was the only Indian reservation in Alaska. In addition, the Act replaced the 1891 trade and manufacturing site provisions, provided for rights of way for railroad and other purposes and the disposal of timber. Under the authority of Section 12 the Rampart City Land Office was authorized in 1889, and a land office at St. Michael was authorized in 1900.

The appropriations act for fiscal year 1900 extended the system of public land surveys to Alaska. Also in 1900, laws relating to mining claims and mineral location were more specifically spelled out. Section 27 of the Act passed in that year provided:

> The Indians *or* persons conducting schools or missions in the district shall not be disturbed in the possession of any lands now actually in their use or occupation, and the land, at any station not exceeding six hundred and forty acres, now occupied as missionary stations among the Indian tribes in the section, with the improvements thereon erected by or for such societies, shall be continued in the occupancy of the several religious societies to which the missionary stations respectively belong, and the Secretary of the Interior is hereby directed to have such lands surveyed in compact form as nearly as practicable and patents issued for the same to the several societies to which they belong; but nothing contained in this Act shall be construed to put in force in the district the general land laws of the United States.[31]

---

[29] *Tlingit and Haida Indians v. The United States*, Finding of Fact No. 104.

[30] 30 Stat 409.

[31] Act of June 6, 1900, 31 Stat 321.

In the next ten years large federal reserves for other purposes were made. Proclamations between 1902 and 1909 established the 16 million acre Tongass National Forest. The Chugach National Forest of another 4,726,000 acres was formed in 1907--later encompassing in 1908 the original Afognak Reserve which had been established in 1892.

Schools and administrative sites were being reserved for the Bureau of Education, and by 1908 nearly all major Native villages had lands reserved for school sites.

Some recognition also was being given to an economic base for the Natives of Alaska. Sheldon Jackson's sponsorship of a reindeer industry for Alaska Natives began in 1890. In March, 1901, Cape Denbigh was designated a reindeer station. As this source of income was being provided, others were being limited. Control of fur seal, salmon, and other fisheries was instituted in 1903--a restriction on these aboriginal uses.

The "uncivilized tribes" specified in the Russian treaty were in an anomalous position. They were omitted from the General Allotment Act, which was a method of attaining citizenship for American aborigines. They were omitted from the Homestead Act as being neither citizen nor alien capable of attaining citizenship. They were forbidden by Congress to enter into treaties with the United States for the cession of some lands and the retention of others. Physically they comprised the major part of Alaska's population. Officially they were invisible. The mood of the land was to procrastinate about Alaska which was far away and would never be a state or have a white resident population to contest national decisions.

A plea for recognition of Alaska Natives under the public land laws was made by the Commissioner of the General Land Office in 1905:

> For more than twenty years the Indians of the United States have been accorded the privilege of acquiring title to lands for their individual use, and to this fact perhaps more than to any other is due the disruption of their tribal relations and their present state of civilization, and it is believed that this experiment amply justifies the extending of equal rights to the natives of Alaska, who are certainly equal if not superior in every sense of the word to the American Indian. Although our Government has been charged with the guardianship of these people, it has done but little for their betterment since they came under its control, nearly thirty years ago,

> in the way of legislation. The history of the Metlakahtlans (detailed in Mr. Witten's report), demonstrate that they are susceptible to a high degree of civilization, and it is believed that with proper encouragement they will finally become useful factors in the development of the resources of Alaska, inured as they are to its climate and conditions, and *I feel fully warranted in stating that the time has arrived when the benefits of the public-land laws should be extended to them*[32] (emphasis added)

The commissioner sets out the provisions of the 1884 Organic Act and refers to subsequent provisions "protecting their possessory rights." He then suggests:

> Although Congress has given them the exclusive possession of lands occupied by them, that right can be enforced only through civil action instituted by them in courts, but owing to their timidity, their lack of understanding of our court procedure, and often to their great distance from the places at which courts sit, as well as their poverty, this right amounts to but little to them and, in my judgement, it would be well to enact a statute making trespass upon their possessions a penal offense, punishable by a fine, and also making it the duty of all officers to see that this statute is enforced.[33]

The Supreme Court was deciding that the United States has the "...duty to protect the property rights of its Indian wards."[34] The next year the Alaska Native Allotment Act was passed: It provided for the allotment of homesteads to the Eskimos and Indians of Alaska on a maximum of 160 acres of nonmineral land.[35] The lands subject to allotment were those "vacant, unappropriated and unreserved," which recognized that some National Forests lands had already been reserved in Alaska.

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[32] *Annual Report of the Commissioner of General Land Office*, 1905.

[33] *Ibid.*

[34] *U. S. v. Berrigan*, 2 Alaska 442 (1905).

[35] Act of May 17, 1906, 34 Stat 197. The Act was later amended by the Act of August 2, 1956, 70 Stat 954, including Aleuts as eligible applicants and providing that allotments might be allowed in National Forests, if certified by the Department of Agriculture as chiefly valuable for agriculture or grazing. The 1956 amendments also restricted liberal interpretations of the law to add "substantially continuous use and occupancy for five years" as a condition to the grant.

A 160-acre allotment fits a society adapted to farming and not one adapted to the hunting, fishing, trapping, and foraging use of land made by most Alaska Natives. Anglo-Saxon property concepts were difficult to understand, and only 80 allotments--most of them in southeastern Alaska--were issued under the Act in the first fifty-four years after its passage.

The first of Wildlife Reserves and Bird Refuges which today total 18 million acres in Alaska, were created in 1909. The next year Congress authorized the President to make withdrawals by Executive Order "subject to valid existing rights."[36]

Although most Alaskans regarded Alaska as a territory before this time, the laws and Constitution of the United States, except where inapplicable, were extended and a territorial system of government was provided in 1912.

The Territory of Alaska, 1912-1941

The Act of August 24, 1912,[37] created a territorial legislature whose acts were subject to Congressional review. Alaska became an organized territory, and there appears to have been a gradual awakening to her resources.

The construction of the Alaska Railroad was authorized in 1914; Mt. McKinley National Park was formed in 1916. Two years later the Katmai National Monument was reserved. These were also years of attention to the interests of the Natives of Alaska. Under the 1910 authority granted the President to make Executive Order withdrawals, withdrawals for "the Natives of the indigenous Alaskan race" were being made in 1914 for Noorvik on the Kobuk River and Ft. Yukon,[38] and in 1915 and 1916 for Chilkat Fisheries, Tyonek, Yendistuky and Klukwan.[39] In 1917 three reserves for Akiak, Mountain Village, and Tatitlek were made in one Executive Order;[40] and in the same year a large reserve at Elim on Norton Bay was created.

In 1915 a bill enfranchising Native Indians and Eskimos was passed by the territorial legislature. It was a measure of doubtful legality until the Citizenship Act of 1924 in which Congress declared:

> That all noncitizen Indians born within the territorial limits of the United States be, and they are hereby, declared to be citizens of the United States: PROVIDED , that the granting of such citizenship shall not in any manner impair or otherwise affect the right of any Indian to tribal or other property.[41]

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[36] A Department of the Interior Decision, July 27, 1945, "Claims of the Natives of Hydaburg, Klawock and Kake, Alaska," held the phrase "subject to valid existing rights" to include rights derived from Indian occupancy as well as those derived from other facts.

[37] Act of August 24, 1912, 37 Stat 512.

Natives of Alaska at this time comprised the majority of the population. It was not until 1939 that non-Natives began significantly to exceed Natives in number for any sustained period. This was the era sometimes characterized as one of "colonialism", during which most of the economic activity was nonresident in nature; and Alaska served only as a highly specialized source of raw materials and products for the "home country."[42]

The U. S. Bureau of Education had responsibility for the Natives of Alaska, and true to its name, stressed education.

To further education in the common schools and universities the Act of March 4, 1915[43] set aside when they were surveyed, specific school sections, as similar lands had been set aside in some of the western states. Two thousand acres at Fairbanks, and in 1929 a general grant of 100,000 acres, were given the Agricultural College and School of Mines--now the University of Alaska. Upon statehood, unsurveyed school sections were replaced by a quantity grant to the state. In 1925 the Department of Interior was authorized to establish vocational training schools for the aboriginal people.

When construction of the Alaska Railroad was begun in 1915, 25 townsites were established along its route. Areas which had not before felt the impact of white settlers began to be opened.

The Alaska Grazing Act was passsed in 1927[44] giving preference to Natives. This was in response to another one-dimensional view of Alaska encouraged by Sheldon Jackson who would make herders out of hunters, as the supporters of the Native Allotment Act twenty years before would have made farmers out of fishermen. In 1926 the Townsite Act was amended to allow them to receive deeds--although their ownership was restricted--to surveyed townsite lots.[45]

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[38] Noorvik, Executive Order No. 2089, November 21, 1914, 144,000 acres Ft. Yukon, Executive Order No. 1896, February 24, 1914, 75 acres.

[39] Chilkat, Executive Order No. 2228, August 2, 1915, 17.2 acres. Tyonek, Executive Order No. 2141, February 27, 1915, 26,918 acres. Yendistucky, Executive Order No. 2388, May 25, 1916, 143 acres. Klukwan (San.), Executive Order No. 2227, August 2, 1916, 82 acres.

[40] Akiak, Executive Order No. 2757, November 22, 1917, 1,373 acres. Mountain Village, Executive Order No. 2757, November 22, 1917, 1,280 acres. Tatitlek, Executive Order No. 2757, November 22, 1917, 480 acres. Elim, Executive Order No. 2508, January 3, 1917, 316,000 acres.

[41] 43 Stat 253, June 2, 1924.

[42] George W. Rogers, *The Future of Alaska, Economic Consequences of Statehood,* Johns Hopkins Press, Baltimore, 1962, pp. 62 and 84.

[43] Act of March 4, 1915, 38 Stat 1214.

[44] Act of March 4, 1927, 44 Stat 1453.

[45] Act of May 25, 1926, 44 Stat 629.

Groundwork for acceleration of the pendulum swing of policy toward cultural identification was being laid in the Meriam Report of 1928. The report resulted from an investigation carried out by the Institute for Government Research into the social and economic conditions of the Indians. Among other things, it stressed the need for a realistic educational program adapted to the problems of Reservation life; the need for sustained and coordinated economic planning and development; the need for more carefully chosen, better paid personnel; the strengthening of community life; and the need for clarification of the law and order function on Indian Reservations.[46]

The Meriam Report had suggested a corporate form for tribal properties, and this, and other recommendations, was incorporated in the Wheeler-Howard Act of 1934.[47] It came to be known as the Indian Reorganization Act. Not all of the provisions were applicable in Alaska, but it did provide that Eskimos and other aboriginal peoples of Alaska would be considered Indians for the purpose of the Act and defined "Indian" as one having more than one-half Indian blood. Later amendments limited loan recipients under the Act to those of no less than one-quarter Indian blood. President Franklin D. Roosevelt urged passage of the bill in a letter to Congressman Howard:

> The Wheeler-Howard bill embodies the basic and broad principles of the administration for a new standard of dealing between the federal Government and its Indian wards.
>
> It is, in the main, a measure of justice that is long overdue.
>
> We can and should, without further delay, extend to the Indian the fundamental rights of political liberty and local self-government and the opportunities of education and economic assistance that they require in order to attain a wholesome American life. This is but the obligation of honor of a powerful nation toward a people living among us and dependent upon our protection.
>
> Certainly the continuance of autocratic rule, by a Federal department, over the lives of more than 200,000 citizens of this Nation is incompatible with American ideals of liberty. It also is destructive of the character and self-respect of a great race.
>
> The continued application of the allotment laws, under which Indian wards have lost more than two-thirds of their reservation lands, while the costs of Federal administration of these lands have steadily mounted, must be terminated.

> Indians throughout the country have been stirred to a new hope. They say they stand at the end of the old trail. Certainly, the figures of impoverishment and disease point to their impending extinction, as a race, unless basic changes to their conditions of life are effected.
>
> I do not think such changes can be devised and carried out without the active cooperation of the Indians themselves.
>
> The Wheeler-Howard bill offers the basis for such cooperation. It allows the Indian people to take an active and responsible part in the solution of their own problems.
>
> I hope the principles enunciated by the Wheeler-Howard bill will be approved by the present session of the Congress.[48]

The Johnson-O'Malley Act was passed the same year to assist in meeting the educational recommendations of the Meriam Report. Section 1 of the Act of May 1, 1936, extended the balance of the Indian Reorganization Act to Alaska, and Section 2 authorized the Secretary of the Interior to designate Indian reservations in Alaska upon vote of the adult Native residents within the proposed reservation:

> That the Secretary of the Interior is hereby authorized to designate as an Indian reservation any area of land which has been reserved for the use and occupancy of Indians or Eskimos by Section 8 of the Act of May 17, 1884 (23 Stat 26) or by Section 14 or Section 15 of the Act of March 3, 1891 (26 Stat 1101) or which has been *heretofore* reserved under any executive order and placed under the jurisdiction of the Department of Interior or any bureau thereof, together with additional public lands adjacent thereto, within the Territory of Alaska, *or any other public lands which are* actually occupied by Indians or Eskimos within said territory.[49]

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[46] *A Sketch of the Development of the Bureau of Indian Affairs and of Indian Policy*, *supra*, p. 584.

[47] Act of June 18, 1934, 48 Stat 986, as amended by Act of May 10, 1939, 53 Stat 698. These later amendments limited loan recipients under the Act to those of no less than one-quarter Indian blood.

[48] Franklin D. Roosevlet to Edgar Howard, April 28, 1934, printed in Report No. 1804 to accompany H. R. 7902, May 28, 1934, 73rd Congress, 2nd Session, House of Representatives.

[49] Act of May 1, 1936, 49 Stat 1250, Section 2.

There was strong public opinion in opposition to the creation of reservations in Alaska, and varied assessments of the merits of the Indian Reorganization Act have been made. One writer praised it saying:

> The IRA encouraged cultural diversity, a part of the essence of democracy, in lieu of a pattern of Indian Administration emphasizing undeviating conformity, the essence of the philosophy of communism.[50]

Another equally condemned it:

> Unfortunately, the major and continuing Congressional movement toward full freedom was delayed for a time by the Indian Reorganization Act of 1934, the Wheeler-Howard Act.[51]

Before the Act was implemented in Alaska other acts affecting Alaska Natives were passed--in 1937 the Reindeer Act,[52] and in 1938 a provision permitting the withdrawals of no more than 640 acres in any one tract for Native schools and hospitals.[53]

Important to Alaska also was a jurisdictional Act passed in 1935 which allowed the Tlingit-Haida Indians of southeast Alaska to bring suit in the Court of Claims for:

> All claims of whatever nature, legal or equitable, which the said Tlingit and Haida Indians of Alaska may have, or claim to have, against the United States, for lands or other tribal or community property rights, taken from them by the United States without compensation therefor, or for the failure or refusal of the United States to compensate them for said lands or other tribal or community property rights, claimed to be owned by said Indians, and which the United States appropriated to its own uses and purposes without the consent of said Indians, or for the failure or refusal of the United States to protect their interests in lands or other tribal or community property in Alaska, and for loss of use of the same, at the time of the purchase of the said Russian America, now Alaska, from Russia, or at any time since that date and prior to the passage and approval of this Act, shall be submitted to the said Court of Claims by said Tlingit and Haida Indians of Alaska for the settlement and determination of the equitable and just value thereof, and the amount equitably and justly due to said Indians from the United States therefor; and the loss to said Indians of their right, title, or interest, arising from occupancy and use, in lands or other tribal or community property, without just compensation therefor, shall be held sufficient ground for relief hereunder; and

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> jurisdiction is hereby conferred upon said Court to hear such claims and to render judgment and decree thereon for such sum as said court shall find to be equitable and just for the reasonable value of their said property, if any was so taken by the United States without the consent of the said Indians and without compensation therefor; that from the decision of the Court of Claims in any suit or suits prosecuted under the authority of this Act an appeal may be taken by either party, as in other cases, to the Supreme Court of the United States.[54]

The Territory of Alaska, 1941-1958

World War II affected Alaska profoundly. Never before, even at the time of the gold rushes was the Territory so advertised. It was the "rediscovery of Alaska."[55]Numerous areas were withdrawn for military use; 2.5 million acres remain under military withdrawal today.

At the same time that soldiers and others "outside" were converging on Alaska, the years from 1942 saw the principle of protecting the property rights of Alaskan Natives vigorously applied by Secretary Ickes and Commissioner Collier.[56]

Seven villages were included in six reserves incorporated under the 1936 Act in Alaska. Four other villages voted down proposed reserves and one was declared invalid by the territorial court. Unalakleet was formed December 10, 1941; and even with World War II intervening, Akutan was formed May 20, 1943; Venetie May 20, 1943; Karluk May 22, 1943; and Wales June 19, 1943. Little Diomede was the last one formed on April 22, 1946. Although numerous petitions for reservations were prepared by other villages, no others were formed under the Act.

Momentum for statehood, which had begun as early as 1915, was beginning to gain strength with the addition of more settlers. Part of these had been delivered to Alaska as Matanuska Valley colonists in the 1930's.

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[50] Theodore H. Haas, *op. cit.*, p. 21.

[51] Arthur V. Watkins, "Termination of Federal Supervision: The Removal of Restrictions Over Indian Property and Person," *Annals*, May, 1957.

[52] Act of September 1, 1937, 50 Stat 900.

[53] Act of May 31, 1938, 52 Stat 593.

[54] Act of June 19, 1935, 49 Stat 388, quoted in *Tlingit-Haida Indians v. The United States*, p. 27.

[55] Clarence C. Hulley, *Alaska: Past and Present*, Binfords & Mort, Portland, Oregon, 1958.

[56] Felix S. Cohen, "The Erosion of Indian Rights: A Case Study in Bureaucracy, 1950-1953," 62 *Yale Law Journal* 349, February, 1953.

After World War II, homesteading of Alaska's public domain by returning war veterans and others seeking a new life in the "last frontier" increased. Homestead entries increased from 13,900 acres for 1946, to 31,296 acres in 1947, 54,514 acres in 1948 and 42,169 acres in 1949.[57] It was not a rush to settle, however. It was strictly speculative. Figure V-10 reflects these entries for the years 1949, 1950, and 1951 where patents resulted for slightly more than half of them. According to one knowledgeable observer in 1950:

> If our objective is to get rid of the land and get it into private ownership this may be good, but if our objective includes, as well, what our land settlement laws are meant to do in the United States--the occupation, settlement and use of the land and a closer settlement of the Territory--then this rush to secure land is certainly a failure and an obstruction.[58]

This was further documented by a study made at the end of 1955, which showed 59 percent of a total acreage transferred to homesteaders on the Kenai Peninsula unoccupied or abandoned and another 31 percent being used solely for residential purposes.[59]

Military Alaska brought with it an explosive expansion of population, the extension and improvement of surface and air transportation, and the pump-priming effect of more than two billion dollars of public investments in construction. It created local markets for some Alaskan products and local capital and labor pools. In its special way the military population was still as nonresident as the miners and fishermen of colonial Alaska.

On February 5, 1941, a bill authorizing the construction of the Alaska Highway was introduced. It was voted on after Pearl Harbor on January 12, 1942, and Alaska began to be drawn closer to the continental United States. Throughout history her fate had been decided in remote capitals thousands of miles away. Interest in statehood quickened. In 1945 an antidiscrimination bill was passed in the territorial legislature, voting precincts were established in most voting precincts where none had been, and some Alaska Natives were elected to the legislature. The prejudice against Natives "not unlike the color bar in many parts of the United States" diminished somewhat.[60] In 1951, six of the forty senators and representatives in the Territorial Legislature were Eskimo or Indian.

In 1946 the Indian Claims Commission Act was passed, permitting the government to be sued by Indian tribes on certain claims not previously allowed. The main source of the claims was compensation for "Indian title" lands. In Alaska these had been considered abandoned, at least in Southeastern, in the opinion of Judge Richard Hanna, appointed in 1942 to hold hearings for a report to the Department of the Interior.[61] When protests of Native groups were raised to pulp development on lands claimed by them, Congress relieved the Forest Service of this impediment by enactment of the Tongass Timber Sales Act of August 8, 1947. The Act defined possessory rights as:

> all rights, if any should exist, which are based upon aboriginal occupancy or title, or upon Section 8 of the Act of May 17, 1884....Section 14 of the Act of March 3, 1891....or Section 27 of the Act of June 6, 1900, whether claimed by native tribes, native villages, native individuals, or other persons, and which have not been confirmed by patent or court decision or included within a reservation.[62]

It was not until 1951, when the time for filing had almost expired, that Native groups filed claims before the Indian Claims Commission.[63] The Tlingit-Haida groups who had already received two time extensions from Congress had filed suit in the Court of Claims. By the end of 1950, over 80 villages had petitions pending with the Secretary of the Interior in which they asked that reserves be established for them under the Indian Reorganization Act.[64] No action was taken. Public opinion in Alaska opposed reservations, and the pendulum of national policy had also begun its swing again toward assimilation and acculturation.

Since 1948, according to Haas, the prior trend of "breaking up" Indian lands and culture had been resumed. Often coupled with the termination process was a demand to liquidate the Bureau of Indian Affairs. The Commissioner of Indian Affairs stated this view in 1952:

> We believe that the services now rendered by the Bureau of Indian Affairs can be transferred step by step, either to the Indians themselves if the service involves handling their own economic affairs, or to other governmental agencies, if it is the type of service normally rendered by government to citizens generally....[65]

A year later Congress passed House Joint Resolution 108,[66] and termination began in earnest for the Menominees of Wisconsin and the Klamath tribes of Oregon. Alaska Natives with few reservations had little to terminate; but, there was a slow-down in recognition of their requests for reserves. Alaska was gearing up for statehood.

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[57] George W. Rogers, *op. cit.*, p. 137.

[58] *Ibid.*, p. 137 quoting Assistant Secretary of the Interior Warne in "Papers Presented at the Seminars on Alaska," Bureau of Land Management, U. S. Department of Interior, Washington, D. C., 1950.

[59] George W. Rogers, *op. cit.*, p. 137.

[60] Clarence C. Hulley, *op. cit.*, p. 351.

[61] W. C. Arnold, *op. cit.*, p. 27.

[62] 61 Stat 920.

[63] See Figure V-7.

[64] See Figure V-8.

[65] Commissioner Myer's address to the Western Governor's Conference at Phoenix on December 9, 1952, reported in *A Sketch of the Development of the Bureau of Indian Affairs and Indian Policy*, *supra*, p. 586.

[66] House Concurrent Resolution 108, 1953 (83rd Congress 1st Sess).

When the Indian Claims Commission was established in 1946, most of the lands of Alaska claimed under "Indian title" had not yet been removed from the control of the federal government and the use of the Native people. Within another fifteen years the threat, at least, of loss of many "Indian title" lands was to arrive.

Before statehood Congress passed, on August 7, 1953, the Outer Continental Shelf Act; and on July 28, 1956, the Alaska Mental Health Act by which 1,000,000 acres were to be selected and the revenues therefrom used for a mental health program in Alaska. The selections were to be made from "vacant, unappropriated, unreserved public lands", and the legislative history of the act speaks of the 99 percent of Alaska owned by the federal government but does not refer to possessory rights of Alaska Natives. The Submerged Lands Act of September 7, 1957, granted all interests of the United States in land lying offshore of surveyed townsites to the territory of Alaska. Specifically excluded from the grant were any lands held for the benefit of any tribe, band, or group of Indians, Aleuts or Eskimos.

Statehood

On February 5, 1956, a convention of delegates of the people of Alaska agreed upon a "Constitution of the State of Alaska" which was ratified by the voters at the territorial primary election held April 24, 1956. Public Law 85-508 (the Statehood Act) was enacted by the 85th Congress, signed and certified by the President on the 7th of July, 1958, and accepted by a majority of the voters of Alaska by a five-to-one margin August 26, 1958.[67]

Under the Act, the Submerged Lands Act was extended and the new state gained title to all but the reserved tidelands of Alaska; the state was also confirmed in school lands and mental health lands given to the territory and, in addition, was granted the right to select over 100 million acres of land. This grant was to allow Alaska:

> ....to achieve full equality with existing states not only in a technical, judicial sense, but on political, economic terms as well....by making the new state master in fact of most of the natural resources within its boundaries....[68]

Section 4 of the Statehood Act[69] provided that the State of Alaska and its people forever disclaim all right and title to any land or property not granted or confirmed to the state or its political subdivisions by or under the authority of the Admission Act, the right or title to which was held by the United States. This disclaimer likewise applied to any lands or other property (including fishing rights) the right or title to which were held by any Indians, Eskimos, or Aleuts, or by the United States in trust for them. Finally, the section provided that no attempt would be made to deal with the legal merits of indigenous rights but the matter would be in status quo for either future legislative action or judicial determination.

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Section 6 confirmed previous grants made to the territory including community grants within the national forests, and made a general grant to the state. Subsection (e) of the Section provided for the transfer and conveyance of all fisheries and wildlife to the state. Subsection (g) provided that the state's right to selection was preferred except where prior existing rights had been confirmed.[70]

The time for filing claims before the Indian Claims Commission had passed. Claims must have arisen prior to August 13, 1946, and have been filed within five years to be heard. The aboriginal title of the Natives of Alaska had received no formal recognition, except that granted in the jurisdictional act for the Tlingit-Haidas in 1935.[71] Again the need in Alaska was arising when there were no laws on the books to provide a remedy. Now many areas of Alaska were feeling the encroachment of the white man. The grants were no longer a string of townsites, a scattering of homesteads, a few hundred mining claims--they were in the millions of acres, and, more importantly, over all of the resources upon which the Native peoples depended for their livelihood. Anglo-Saxon land ownership was foreign to Alaska Natives. They might claim and use the land on which their homes, fish camps, and landing sites were situated, with the same protectiveness of any other landowner; but the fruit of the land was more important than the land itself. Important were the fish, fur bearing animals, caribou, and moose--and, even more important than land animals for Coastal Eskimos--the fruits of the sea.

A claim to be pursued in the courts must be one arising under the Constitution, laws or treaties of the United States, or Executive Order of the President, or one which otherwise would be recognizable if the claimant were not an Indian tribe, band or group. The Supreme Court, in a case arising in Alaska, had held there was no right to compensation under the Fifth Amendment;[72] and the old problem of having no recognizable "tribes" also continued to plague Alaska Natives.

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[67] George W. Rogers, *op. cit.*, p. 173.

[68] *U. S. Code, Congressional and Administrative News*, 85th Congress, 2nd Session, 1958, Legislative History, p. 2933.

[69] Act of July 7, 1958, *supra*, Section 4.

[70] Report No. 624 on H. R. 7999, 85th Congress, 1st Session, for the Senate Committee on Interior and Insular Affairs, June 25, 1957, *Providing for the Admission of the State of Alaska into the Union.*

[71] Act of June 19, 1935, *supra.*

[72] *Tee-Hit-Ton Indians v. the United States*, 348 US 272.

Section 2 of the Omnibus Act of June 26, 1959, amended Section 4 of the Statehood Act to clarify wording concerning "Native" lands. The Committee report stated:

> Section 2, in subsection (a), would amend section 4 of the Statehood Act. Section 4 now provides, in pertinent part, that Alaska and its people disclaim any right (a) to any lands in Alaska the right or title to which is now held by the United States, except for land granted to Alaska by the Statehood Act, and (b) to land and property held by Alaska Natives or held in trust by the United States for such Natives. The section further provides that "all such lands * * * shall be and remain under the absolute jurisdiction and control of the United States." It was intended that such absolute jurisdiction would apply to Native lands only (b) above), but the language actually enacted might be interpreted as comprehending the lands described in both (a) and (b). The amendment would make clear that "the absolute jurisdiction and control of the United States" does not apply generally to land held by the United States in Alaska, but only to land and property held by Natives or by the United States in trust for Natives.[73]

Alaska began to make land selections. As the result of those selections, particularly in the Fairbanks and Wood River-Tikchik areas, Native groups began to protest. Beginning in late 1961 the Bureau of Indian Affairs filed protests on behalf of the Natives of Minto, Northway, Tanacross, and Lake Alegnagik, totaling approximately 5,860,000 acres and conflicting with 1,750,000 acres of state selections. The filing of individual or village protests continued through 1966. In the fall of 1966 the rate of filings accelerated and many were made by groups and associations. By April 1, 1968, there were forty recorded protests covering 296,600,000 acres.

The State Director of the Bureau of Land Management for Alaska was instructed in December, 1961, to dismiss the protests unless the claims were within the definition of regulations which provided that: "lands occupied by Indians, Aleuts and Eskimos, in good faith are not subject to entry or appropriation by others."[74] Upon an opinion of the Anchorage Regional Solicitor given on February 20, 1962, asserting that the issues raised involved the fact of "Indian title" and that a determination of the facts must be made; managers were instructed not to adjudicate protests of this type. The Regional Solicitor concluded by suggesting that the protests be dismissed on jurisdictional grounds in that the only occupancy authorized to be recognized by the Bureau of Land Management under current regulations was that leading to issuance of allotments under the Alaska Native Allotment Act.

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In 1962 a number of the protests were dismissed and subsequently appealed to the Director of the Bureau of Land Managment. In early 1963, the Director advised local offices to discontinue decisions at the local level and forward the case record to Washington for consideration. The Bureau of Land Management of the Department of the Interior announced the opening for oil and gas leasing of large blocks of land on the North Slope of the Brooks Range in September, 1966. This action was protested by the Native groups and resulted in the Secretary of the Interior announcing in November that lease issuances would be suspended pending further consideration of the protests.

Policy of the Interior Department relative to what came to be called the "land freeze" was expressed in a letter by the Secretary to Governor Hickel dated August 10, 1967, which pointed out that bills were presently pending in Congress and, in the meantime, the Bureau of Land Management would do whatever it could to proceed where actual construction of a road, school, airport or other public facility was being held up. Also, where an individual had complied with the laws and regulations, invested time and money in the land, and had earned equitable title prior to the Native protests, patent might yet issue.

On August 22, 1967, the Director, Bureau of Land Management, issued procedures to implement the Secretary's program. These procedures provide for referring individual cases to the Bureau of Indian Affairs for a recommendation in consultation with the protestants, when a case is affected by a protest. With this exception, the Department of the Interior's position is to suspend action on all cases until the protest has been resolved. In 1967, the state filed a civil action in the Federal District Court,[75] seeking a court order directing the Secretary of the Interior to proceed with recognition of state selections. The case is pending.

At the time Alaska became a state, one writer assessed our federal Indian policy as:

> ....a resumption of pre-New Deal attempts to compel the tribesmen to acculturate themselves to the general American culture by abolishing Indian culture, while hoping that the resulting vacuum will be properly filled....

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[73] Omnibus Act of June 25, 1959, 73 Stat 141.

[74] 43 CFR 2013.9.3.

[75] *State of Alaska v. Secretary of the Interior*, Civil Docket No. A-21-67, U. S. District Court.

and cautioned:

> The Indian should be prepared to join society if he wishes but society must also be prepared to receive him and other groups on an equal basis, so that he will no longer find isolation less oppressive than discrimination.[76]

Only two years earlier an anthropologist had echoed the same concern by saying:

> ....(the) difference between individual change and system change in acculturation situations is fundamental, and it means that we should not jump to the conclusion that full acculturation will soon take place simply because we observe a certain segment of the population leaving Indian Country to take up residence in the white world....[77]

In the more than ten years which have followed these remarks, the pendulum seems to be swinging back the other way. This is illustrated in Congressional Resolution 11 now pending which states:

> American Indian and Alaska Native property will be protected; that Indian culture and identity will be respected; that the necessary technical guidance and assistance will be given to insure future economic independence; that continued efforts will be directed to maximum development of natural resources; that inadequate and substandard housing and sanitation will be corrected; that a comprehensive health program incorporating and assuring curative and preventive physical and mental health will be further developed for Indian and Alaska natives; and that a long-term general, vocational, technical, and professional education program will be encouraged and developed for both old and young American Indians and Alaska natives so that they may share fully in our society.

It is strengthened and clarified by the statement of the President[78] to the Congress in March, 1968, which is now the official policy of the United States. The President stated:

> Our goal must be:
>
> --A standard of living for the Indians equal to that of the country as a whole.
>
> --Freedom of Choice: An opportunity to remain in their homelands, if they choose, without surrendering their dignity: an opportunity to move to the towns and cities of America, if they choose, equipped with the skills to live in equality and dignity.
>
> --Full participation in the life of modern America, with a full share of economic opportunity and social justice."

and with respect to Alaska Native land claims in particular:

> The land rights of the Native people of Alaska--the Aleuts, Eskimos, and Indians--have never been fully or fairly defined. Eighty-four years ago, Congress protected the Alaska Natives in the use and occupancy of their lands. But then, and again when Alaska was given statehood, Congress reserved to itself the power of final decision on ultimate title.
>
> It remains our unfinished task to state in law the terms and conditions of settlement, so that uncertainty can be ended for the Native people of Alaska.
>
> Legislation is now pending to resolve this issue. I recommend prompt action on legislation to:
>
> --Give the native people of Alaska title to the lands they occupy and need to sustain their villages.
>
> --Give them rights to use additional lands and water for hunting, trapping and fishing to maintain their traditional way of life, if they so choose.
>
> --Award them compensation commensurate with the value of any lands taken from them.79

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[76] Robert W. Oliver, "The Legal Status of American Indian Tribes," 38 *Oregon Law Review*, 193, April 1959, p. 245.

[77] Evon Z. Vozt, "The Acculturation of American Indians," *Annals of the American Academy of Political and Social Science*, May, 1957.

[78] Section 4, S. Con. Res. 11, 90th Congress, 1st Session, February 17, 1967.

[79] Lyndon B. Johnson, *President's Message to the Congress on Goals and Programs for the American Indian*, March 6, 1968.

PRESENT STATUS OF LANDS: STATEWIDE

A portrayal of the land ownership of Alaska is limited in its accuracy by the rapidity with which title changes are being made -- in 1966 the Bureau of Land Management issued nearly two patents a day -- and by the fact that most of the 375 million acres of the state are still unsurveyed.[80] There are four broad divisions of land ownership:

... lands still within the public domain open to entry, location and other settlement under the general land laws of the United States;

... lands owned by the federal government but reserved or withdrawn from the public domain for particular uses and agencies;

... lands which have been patented and are no longer owned by the federal government, although they may be owned by the state; and, finally,

... those lands selected, claimed and which are in the process of changing ownership or those subject to use permit or lease.

Public Domain

Nearly 275 million acres - more than two-thirds of the state - are public domain lands. It is these lands which are still subject to "Indian title"--that right of aboriginal people to occupy and use land which they have used from time immemorial.[81] The most recent and specific recognition of such Indian title is that given by the Court of Claims to 2.6 million acres in Southeast Alaska.[82] It is this aboriginal use and occupancy upon which the Natives of Alaska rely in filing forty protests covering 296.6 million acres--approximately 80 percent of the state. Over 200 million acres covered by the protests are in the public domain. In addition there are over 75 petitions pending before the Secretary of the Interior filed under the May 1, 1936 Act[83] (the extension of the Wheeler-Howard Act to Alaska) which request hearings and, where appropriate, a withdrawal of land from the public domain for the use of the respective Native groups. One hundred and twenty-two million acres are requested by the petitions. Most of the lands covered by the petitions are duplicated in the protests.

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[80] Statistical material herein furnished by the U.S. Department of Interior, Bureau of Land Management, Division of Lands and Minerals, Anchorage, Alaska.

[81] Felix S. Cohen, "The Spanish Origin of Indian Rights in the Law of the United States," *op. cit.*, p. 8.

[82] *The Tlingit and Haida Indians of Alaska and Harry Douglas, et al intervenors v. The United States*, No. 47900, U. S. Court of Claims, January 19, 1968.

[83] See regional maps which follow showing protests and petitions presently on file.

FIGURE V-1

ACREAGE OF PUBLIC DOMAIN IN ALASKA UNDER JURISDICTION OF VARIOUS FEDERAL AGENCIES[a]

U. S. Department of the Interior	
Bureau of Land Management	305,008,555[b]
National Park Service	6,910,496
Bureau of Reclamation[c]	5,215
Fish and Wildlife Service	18,622,448
Bureau of Indian Affairs	4,064,615[d]
Other[e]	36,247
U. S. Department of Agriculture	
Forest Service	20,735,668
Other	7
U. S. Department of Defense	
Air Force	128,235
Army	2,263,406
Corps of Engineers	38,558
Navy	131,836
Other U. S. Agencies	
Other Civil Agencies	87,150
Total	358,032,436

[a] Because of joint jurisdiction over some lands, the total would not give an accurate figure.

[b] Includes 23 million acres in Naval Petroleum Reserve No. 4 and 8,959,000 acres in Rampart Power Site Classification. The Department of Defense reports 23,680,000 acres in Petroleum Reserve No. 4 and jurisdiction of surface use of the Reserve is now being negotiated between Defense and the Bureau of Land Management.

[c] Now Alaska Power Administration.

[d] Does not include Indian Trust Title.

[e] Predominantly the Alaska Railroad now in Department of Transportation.

Source: *Public Land Statistics 1967*, U. S. Department of the Interior, Bureau of Land Management.

Federal Reserve (Withdrawn) Areas

Public Land Statistics for 1967 indicate 358 million acres under the jurisdiction of various federal agencies. For a more accurate picture of those which are reserved for particular uses and purposes, the unreserved public domain lands should be subtracted from the total acreage shown for the Bureau of Land Management in Figure V-1. With this reduction, federal reserve or withdrawn lands total close to 85 million acres. Largest acreages are included in the National Parks, the National Forests and the Wildlife and Wilderness Reserves. The juxtaposition of these areas to the Native villages of Alaska, as well as the expanding areas of economic development in Alaska, are more clearly seen in the following sections of this chapter where maps and comparable statistics of ownership and claim are given for each region. It is upon the more than 4 million acres listed under the jurisdiction of the Bureau of Indian Affairs that less than one-tenth of Alaska Natives live in or near 21 villages.

Native Reserves

Reservations have never been looked upon with favor in Alaska; and except for the Metlakatla Reserve on Annette Island and the Klukwan Reserve, which were both created by Act of Congress,[84] there are no "reservations" in Alaska. Those Alaska Natives who do live on lands reserved for their use do not do so under tribal governments or legal systems familiar in other parts of the United States. Although they often have not shared fully in the benefits of citizenship, the attempt has always been made to treat Alaska Natives as participating citizens of the state. Six of the Native reserves were created under the terms of the Wheeler-Howard Act--also called the Indian Reorganization Act.[85] These are the IRA reserves of Karluk, Wales, Diomede, Unalakleet, Akutan and Venetie-Chandalar totaling 1,540,270 acres.[86] The Indian Reorganization Act, in addition to providing for adoption of a form of government, conditions of membership, regulation of domestic relations of the members and prescription of rules of inheritance, also provides for the regulation and disposition of all property within the jurisdiction of the tribe. Approval of a majority of at least 30 percent of members entitled to vote in each reserve is required to establish a reserve. Reserves proposed at Shungnak, Barrow, White Mountain and Shishmaref were voted down by the people; and one at Hydaburg, formed under proclamation dated November 30, 1949, was later judicially determined to have been improperly formed.[87]

In the late 1940's according to Bureau records, eleven reservations were proposed based upon studies and conferences with the respective Native groups. All of these were in the western and northern parts of Alaska, and had they been acted upon would have created reserves for 2,000 people on 3,500 square miles (or 2.2 million acres) of land. The largest proposed was at Noatak and the smallest at King Island. An additional eleven reserves were petitioned for by the Natives of Yakutat, Kasaan, Angoon, Klukwan, Klawock and Kake in Southeastern Alaska and Northway, Point Hope, White Mountain and Elim in Northwest Alaska. White Mountain and Elim were already

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located on Executive Order reserves, and Klukwan in 1957 was confirmed in their reserve by Act of Congress. The village of Minto asked for a reserve of 324 square miles (207,360 acres). The concluding sentence in the status report on each of these proposals is "No action was taken."[88]

Additional petitions were prepared by 90 villages in 1950 and shortly thereafter and no action taken.[89]

Other reserves--twelve in number--were created during the early 1900's by Executive Order. The Moquawkie or Tyonek Reserve is the one most familiar from this group. They total 1,259,679 acres.[90] In addition there are school and administrative reserves which have come to be used as Native reserves and these total 13,772 acres.[91] The few hundred acres remaining under Bureau of Indian Affairs jurisdiction are used for rural school and administrative sites.

School site withdrawals as of June 30, 1967, totalled 497.58 acres in Bureau of Indian Affairs districts as follows:

District	Acres
Southeastern	171.0
Nome	64.97
Fairbanks	42.6
Bethel	140.8
Anchorage	78.0

Many of these school sites, which range in size from .3 acres to 40 acres, are gradually being transferred by deed to the State of Alaska under authority of the 1953 Act providing for orderly transfer of Bureau schools to the state.

In administering these reserves the Bureau of Indian Affairs, except where prohibited, issues permits and leases, both surface and subsurface. Mineral leases have been issued on 11,879 acres. Of these lands 633 acres are reserve lands at Klukwan leased to U. S. Steel for iron ore exploration. All but $1,000 of the total receipts of $12.193,149 from such leases and the balance of the acreage is accounted for by oil and gas leases on the Tyonek reserve.[92] Surface permits totalled 5,826.27 acres on June 30, 1967, with annual rental recepits

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[84] See Figure V-2.

[85] Act of May 1, 1936, *supra*.

[86] See Figure V-3.

[87] *U. S. v. Libby, McNeil and Libby*, 14 Alaska 37, 107 F Supp. 697.

[88] Records of Realty Office, Bureau of Indian Affairs, Juneau, Alaska.

[89] See Figure V-7.

[90] See Figure V-4.

[91] See Figure V-5.

[92] "Summary of Leases and Mining Permits," *Annual Report of Mineral Leasing Activities*, June 30, 1967, Bureau of Indian Affairs, Juneau, Alaska.

totalling $9,378.23. Many of the use permits are to other government agencies for such purposes as National Guard Armories, hospital sites, or U. S. Coast Guard Navigational Aids.[93]

Included in the total Bureau of Indian Affairs withdrawal acreage are over 1.25 million acres of reindeer reserves. These were created in the early part of the 20th century.

FIGURE V-2

RESERVATIONS BY ACT OF CONGRESS

Act	Name	Acreage	Population Total	Population Native
March 3, 1891 (26 Stat 1101)	Metlakatla	86,741.0	1,000	960
	Annette		550	35
E. O. April 21, 1913 Confirmed and enlarged by Congress Act of Sept. 2, 1957 (71 Stat 596)	Klukwan	894.7	115	110
Total		87,635.7	1,665	1,105

Source: Copies of Proclamation and Executive Order supplied by Department of the Interior, Bureau of Indian Affairs, Juneau Area Office, Juneau, Alaska, and *Villages in Alaska and Other Places Having a Native Population of 25 or More,* compiled by Federal Field Committee for Development Planning in Alaska, Anchorage, Alaska.

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[93] *Ibid.*

Type of Order
Proc.
Proc.
FR 46-947
PLO 128
Proc.
Proc.
Proc.
Source:
*Includes

FIGURE V-3

INDIAN REORGANIZATION ACT RESERVES

Type of Order	Name	Date of Proc. or Order	Acreage	Population Total	Population Native
Proc.	Akutan	May 20, 1943	72,000	114	101
Proc. FR 46-9476	Diomede	Apr. 22, 1946	3,000	70	69
PLO 128	Karluk	May 22, 1943	35,200	100	98
Proc.	Unalakleet (65 acres leased to State for Airport purpose)	Dec. 10, 1941	870	622	513
Proc.	(Venetie	May 20, 1943	1,408,000	135	134
	(Arctic Village			82	81
	(Christian (Village			-	-
	(Kachick			-	-
Proc.	Wales	June 19, 1943	21,200*	125	115
	Total		1,540,270	1248	1111

Source: Copies of Proclamation and Executive Orders supplied by Department of the Interior, Bureau of Indian Affairs, Juneau Area Office, Juneau, Alaska, and *Villages in Alaska and Other Places Having a Native Population of 25 or More, Estimates, 1967*, compiled by Federal Field Committee for Development Planning in Alaska, Anchorage, Alaska.

*Includes 14,000 acres of water.

FIGURE V-4

EXECUTIVE ORDER RESERVES

Type of Order	Name	Date of Order	Acreage	Population Total	Population Native
E.O.	Akiak	Nov. 22, 1917	1,373.06	179	173
E.O.	Mountain Village	Nov. 22, 1917	1,280.00	412	394
E.O.	Tatitlek	Nov. 22, 1917	480.00	160	150
E.O.	Amaknak Is. (Adjacent to Unalaska)	Feb. 23, 1933	110.00	-	-
E.O.	Chilkat Fisheries	Aug. 2, 1915	17.21	-	-
E.O.	Fort Yukon	Feb. 24, 1914	75.00	10	10[a]
E.O.	Klukwan (Old village of Kluktov)	Aug. 2, 1915	82.42	-	-
E.O.	Kobuk River (Noorvik)	Nov. 21, 1914	144,000.00	445	437
E.O.	Norton Bay (Elim)	Jan. 3, 1917	316,000.00	146	142
E.O.	Tetlin	June 10, 1930	768,000.00	92	88
E.O.	Tyonek Moquawkie	Feb. 27, 1915	26,918.00	210	204
E.O.	White Mountain	Sept.25, 1925	1,200.00	119	115
E.O.	Yendistucky (Unoccupied at present-Haines)	May 25, 1916	143.80 [b]	-	-
	Total		1,259,679.49	1,773	1,713

[a] Only two families from the village of Fort Yukon live on this small reserve which is rapidly being eroded by the river. Total population of Fort Yukon is 650, 600 of whom are Native.

[b] Haines-Port Chilkoot area, 300 Natives; undetermined how many live on the reserve.

Source: Copies of Proclamation and Executive Orders supplied by Department of the Interior, Bureau of Indian Affairs, Juneau Area Office, Juneau, Alaska, and *Villages in Alaska and Other Places Having a Native Population of 25 or More, Estimates, 1967*, compiled by Federal Field Committee for Development Planning in Alaska, Anchorage, Alaska.

Population	
otal	Native
179	173
412	394
160	150
-	-
-	-
10	10[a]
-	-
445	437
146	142
92	88
210	204
119	115
-	-
1,773	1,713

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FIGURE V-5

ADMINISTRATIVE RESERVES

Type of Order	Name	Date of Order	Acreage	Population Total	Population Native
E.O.	Copper Center	Feb. 15, 1905	1,041.34	150	95
E.O.	Eklutna	Dec. 5, 1927	1,819	39	39
E.O.	Hood Bay		612.6	-	-
E.O.	Point Hope	July 8, 1930	6,400	325	312
	Total		13,772.81	514	446

Source: Copies of Proclamation and Executive Order supplied by Department of the Interior, Bureau of Indian Affairs, Juneau Area Office, Juneau, Alaska, and *Villages in Alaska and Other Places Having a Native Population of 25 or More, Estimates 1967*, compiled by Federal Field Committee for Development Planning in Alaska, Anchorage, Alaska.

FIGURE V-6

CLAIMS BEFORE THE INDIAN CLAIMS COMMISSION

Docket No.	Group
171 (5 claims)	Tee-Hit-Ton Indians
187	Natives of Chitina
199	Athapascan Indians of Stevens Village
200	Natives of Tatitlek
278	Tlingit-Haida Indians
284	Gambell and St. Lawrence Island Eskimos
285	Unalakleet & Unaligmut-Malemut Eskimos
286	Shungnak and Kowagmiut Eskimos
287	Nisgah Tribe
352 (3 claims)	Aleut Community of St. Paul Island
369	Aleut Tribe et al.
370	Natives of Palmer, Alaska

Source: Department of the Interior, Bureau of Land Management, Anchorage, Alaska.

FIGURE V-7

PETITIONS FOR HEARINGS TO DETERMINE POSSESSORY RIGHTS OR RESERVES UNDER THE IRA ACT

Village	Village
Akiachak	Kwigillingok
Akiak	Kwinhagak
Akutan	Minto
Allakaket and Alatna	Mountain Village
Alexandrovsk	Mud River Flats
Angoon	Napakiak
Atka	Nenana
Belkofski	Nikolski
Chalkyitsik	Noatak
Chaniliut, Kotlik, and Pastolik	Noorvik
Chenega	Nondalton
Circle City	Northway
Chignik	Nulato
Chitina	Ninivak Island, Mekoryuk
Copper Center	Old Harbor
Craig	Ouzinkie
Deering	Perryville
Diomede	Pimute
Eklutna	Point Lay
Elim	Point Hope
Fort Yukon	Port Graham
Galena	Savoonga
Gambell	Saxman
Golovin	Selawik
Goodnews Bay	Shageluk
Haines	Shungnak
Hoonah	Sleetmute
Hungry Creek	Shishmaref
Hydaburg	South Naknek
Juneau	Stevens Village
Kaguyak	St. George Island
Karluk	St. Michael
Ketchikan	Tanacross
Kake	Tanunak
Kalskag	Tatitlek
Kaltag	Teller Mission
Kasaan	Tuluksak
Kiana	Tyonek
King Cove and Belkofski	Unalakleet
King Island	Venetie
Kivalina	Wainwright
Klawock	Wales
Kokhonak	White Mountain
Kotzebue	Yakutat
Kwethluk	

Source: Copies of Petitions filed in Tribal Operations Office, Bureau of Indian Affairs, Juneau Area Office, Juneau, Alaska.

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[98] Publ
[99] *Ibid.*
[100] Publ
[101] Exec
[102] Publ

Wildlife Reserves

More than 18 million acres are withdrawn as wildlife reserves under the jurisdiction of the Fish and Wildlife Service of the Department of the Interior. Many are in areas of intensive Native use of land. Nine prohibit hunting, trapping, capturing or disturbing the birds or other wildlife, without special provision and regulations issued by the Service.[94] Other reserves make no mention of any prohibition against any aboriginal use. Their very purpose of protecting birds under international treaty implies a prohibition against any hunting.[95] As seen in Figure V-8, the major wildlife ranges, however, include provisions which authorize the Secretary of the Interior to permit hunting and taking of game animals, birds and fish, as well as the trapping of fur animals so long as the provisions of state law governing the hunting and taking of wildlife are observed. The Order establishing the Arctic National Wildlife Range[96] so provides, and the Clarence Rhode[97] and Izembek National Wildlife Refuge[98] state further that:

> This order shall not be construed to abrogate or impair any legal or aboriginal claim of right of the natives to use the lands, if any, and they may hunt, fish and trap in accordance with applicable law, and carry on any other lawful activities.[99]

The most recent order on the Kodiak National Wildlife Refuge[100] makes no mention of hunting or aboriginal use. The village sites--one mile square--for each of the villages of Old Harbor, Akhiok, Larsen Bay, Ugashik, Uyak, Alitak, Ayakulik and Kaguyak are excepted from the Refuge.

The Kenai National Moose Range was created first as a temporary withdrawal for classification in 1938 and later made a reserve by Executive Order in 1941.[101] Hunting and taking of moose and other game animals or game birds, or the trapping of fur animals, was made permissible under regulations to be established by the Secretary. Simenof Reserve for the protection of sea otter, recognized that the land might also be used for grazing but stated that disturbance of the sea otters by the grazing lessee would be cause for cancellation of the grazing lease.[102]

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[94] See Figure V-8.

[95] Hazen Bay Refuge, established by Executive Order 7770, December 14, 1937, and Nunivak Island Refuge, established by Executive Order 5470, October 22, 1930.

[96] Public Land Order No. 2314, dated December 6, 1960.

[97] Originally established as the Kuskokwim National Wildlife Range by Public Land Order 2213, dated December 6, 1960, and renamed by Public Land Order 2253, dated January 16, 1961.

[98] Public Land Order 2216, dated December 6, 1960.

[99] *Ibid.*

[100] Public Land Order 1634, dated May 9, 1958.

[101] Executive Order 8979, dated December 16, 1941.

[102] Public Land Order 1749, dated October 30, 1958.

FIGURE V-8

WILDLIFE RESERVES WHICH PROHIBIT ABORIGINAL HUNTING, FISHING, AND TRAPPING

Reservation	Order No.	Date
Bering Sea	E. 0. 1037	Feb. 27, 1909
Tuxedni	E. 0. 1039	Feb. 27, 1909
Saint Lazaria	E. 0. 1040	Feb. 27, 1909
Yukon Delta	E. 0. 1041	Feb. 27, 1909
Pribilof Island	E. 0. 1044	Feb. 27, 1909
Bogoslof	E. 0. 1049	March 2, 1909
Forrester Island	E.0. 1458	Jan. 11, 1912
Hazy Islands	E. 0. 1459	Jan. 11, 1912
Chamisso Island	E. 0. 1658	Dec. 7, 1912
Semidi Island	E. 0. 5858	June 17, 1932

Source: Copies of Executive Orders and Public Land Orders supplied by U. S. Fish & Wildlife Service, Kenai, Alaska

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FIGURE V-9

APPROXIMATE ACREAGES OF VARIOUS MAJOR WITHDRAWALS IN ALASKA

AGENCY	ACRES	AREA OR TITLE
Department of Defense	23,000,000	Pet 4
	3,000	Point Lay
	3,000	Point Spencer
	2,500	Galena
	3,000	Indian Mountain
	34,000	Clear
	655,000	Eielson Air Force Base
	256,000	Fort Wainwright
	607,800	*Test Range
	623,500	Fort Greely - Granite
	4,000	McGrath
	8,000	Unalakleet
	5,000	Cape Romanzof
	1,000	Mount Spur
	5,500	Middleton Island
	2,500	Cape Newenham
	61,000	Adak
	12,000	Attu
	7,000	Fairbanks Area
	70,000	Anchorage Area
Bureau of Indian Affairs, U.S.D.I.	1,408,000	Chandalar N.R.
	144,000	Kobuk (Noorvik) N.R.
	3,000	Little Diomede N.R.
	7,000	Wales N.R.
	316,000	Norton Bay N.R.
	768,000	Tetlin N.R.
	1,205,000	St. Lawrence R.S.
	1,500	Akiak N.R.
	2,000	Eklutna N.R.
	27,000	Tyonek N.R.
	35,000	Karluk N.R.
	72,000	Akutan N.R.
	115,000	Annette Island (Metlakatla)
	48,000	Cape Denbigh Reindeer Stn.
	1,000	Copper Center School
	1,000	Tatitlek N.R.
	1,000	Mountain Village N.R.
	1,000	White Mountain School
	6,500	Point Hope School
	1,000	Angoon Administrative Site
	500	Miscellaneous School Sites
	500	Misc. Administrative Sites
	500	Other Miscellaneous

, 1909
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, 1909
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, 1912
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, 1932
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FIGURE V-9 Continued

AGENCY	ACRES	AREA OR TITLE
Fish and Wildlife Service, U.S.D.I.	1,000	Chamisso N.W.R.
	8,900,000	Arctic N.W.R.
	41,000	Bering Sea N.W.R.
	1,109,500	Nunivak
	7,000	Hazen Bay N.W.R.
	1,870,000	Rhode N.W.R.
	415,000	Izenbek N.W.R.
	6,500	Tuxedni N.W.R.
	1,730,000	Kenai Moose Range
	8,500	Semidi N.W.R.
	1,815,000	Kodiak Bear Range
	3,000	Forrester Island N.W.R.
	10,500	Simeonof N.W.R.
	2,720,000	Aleutian Island N.W.R.
	500	Bogoslof N.W.R.
	50,000	Pribilof Islands
	200	Miscellaneous
National Park Service, U.S.D.I.	1,939,000	McKinley N.P.
	2,826,500	Glacier Bay N.M.
	2,698,000	Katmai N.M.
Alaska Power Administration, U.S.D.I.	5,000	*Eklutna Project
U.S. Forest Service, U.S.D.A.	4,726,000	*Chugach N.F.
	16,015,904	*Tongass N.F.
U.S. Geological Survey, U.S.D.I.	80,000	*Power Site Reserves
	9,280,000	*Power Site Classifications
Federal Power Commission	?	*Power Projects
Bureau of Land Management, U.S.D.I.	1,000	Montague Island Abandoned Military Reserve
	8,000	*Paxson Lake Classification
	2,000	Cascade Creek Timber Reserve
	2,000	Muddy River Timber Reserve
	500	*Portage Classification
	7,500	Taiya Inlet Classification
	500	*Broad Pass Material Site

AGENCY	ACRES	AREA OR TITLE
BLM (Cont.)	5,000	*Lake George Recreation
	1,000	*Miles Lake Recreation
	1,000	*Eagle Recreation
	2,000	*Clear Creek Recreation
	1,000	Miscellaneous Abandoned Military Reserves
	1,000	Miscellaneous Administrative Sites
	2,000	*Miscellaneous Recreation
	26,500	Miscellaneous Patented and Unpatented Townsites

Source: U. S. Department of the Interior, Bureau of Land Management, Anchorage, Alaska.

*These withdrawals are open for mineral leasing.

Patented Lands

Lands are transferred from the United States by patent, quitclaim deed, or legislative act usually followed by confirming patent or deed. It is estimated that less than 50,000 acres have been transferred by quitclaim deed. Most of these are in the areas of population concentration and along the highway network. School lands and those specific grants at the time of statehood[103] illustrate grants by legislative action. The state may request a confirming patent of the school grant lands which total approximately 100,000 acres. These are located primarily in the Matanuska-Susitna and Tanana Valley areas. Except for lands selected by the state upon which patents will be issued, other transfers to the state have been by quitclaim deed.

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[103] Section 6(c), Act of July 7, 1958, 72 Stat 339, and Section 45, Act of June 25, 1959, 73 Stat 141.

Patents to more than six million acres, as may be seen in Figure V-10, have been issued by the Bureau of Land Management. Prior to 1944 complete information is not available, but it is estimated that an additional 100,000 acres were patented in those years. Almost 90 percent of the total patented lands are those which have gone to the State of Alaska. Two quantity grants were made prior to statehood. The Act of January 21, 1929, provided for the selection of 100,000 acres for the benefit of the University of Alaska. The Mental Health Act of 1956 granted to the state the right to select within 10 years one million acres, basically for the support of the mental health program in Alaska. Also, school and university sections in place were reserved for the benefit of the future state. An estimated 78,000 acres of these "school" sections and 17,000 acres of university sections were confirmed and transferred to the state by the Statehood Act.[104] In addition, the state has pending selections on some 12 million acres of land of which 8.5 million acres have been tentatively approved. Tentative approval creates a jurisdictional transfer, and thereafter the state may execute conditional sales and leases on the land. Figure V-11 illustrates the status of title on state-selected lands.

The state's present authority to select mineral lands--those lands under federal mineral lease--expires January 3, 1969. The term, initially for five years at the time of statehood, was extended for another five years in 1964. Several bills have been introduced to extend the time for selection of mineral lands.[105] By terms of the Statehood Act, Alaska receives now 90 percent of the revenues derived from federal leases within the state.

The location of state selected lands is shown in more detail on regional maps which follow.

Most of the private or individually patented lands occur in the areas of state selection. Others--except for scattered, small parcels--are near population centers. There are two methods by which Alaska Natives--aside from their eligibility to participate as other citizens in obtaining lands from the public domain--have obtained title to land.

YEAR
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1921
1922
1923
1924

YEAR
1959
1960
1961
1962
1963
1964
1965
1966
1967
TOTAL

[a]Incomplete,
[b]Includes 10

Source: U. S.
Divisi

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[104] Department of the Interior, Bureau of Land Management, Division of Lands and Recreation, *Land Law Effectiveness Study*, January 24, 1964.

[105] For example, S.3406 which amends S.2678 introduced November 27, 1967.

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FIGURE V - 10

LANDS PATENTED IN ALASKA[a]
(IN ACRES)

Before Statehood

YEAR	TOTAL	YEAR	TOTAL
1890	276	1925	9,628
1899	174	1926	9,069
1896	69	1927	8,479
1900	718	1928	7,790
1901	1,191	1929	8,199
1902	1,441	1930	8,735
1903	1,723	1931	5,049
1904	1,771	1932	5,207
1905	2,974	1933 to 1943	---
1906	4,026	1944	7,273
1907	7,133	1945	2,516
1911	4,178	1946	8,655
1912	1,192	1947	2,080
1913	4,788	1948	2,221
1914	4,545	1949	22,876
1915	5,895	1950	29,943
1916	7,868	1951	24,504
1917	7,962	1952	16,805
1918	5,442	1953	20,779
1919	7,600	1954	22,811
1920	16,510	1955	21,489
1921	7,164	1956	15,482
1922	20,621	1957	19,042
1923	15,437	1958	10,662
1924	15,567	SUB TOTAL -	435,559

After Statehood

YEAR	PRIVATE	STATE	TOTAL
1959	14,456	71	14,527
1960	14,374	38,896	53,270
1961	26,751	216,244	242,995
1962	37,803	358,156	395,959
1963	49,212	261,476	310,688
1964	57,617	396,204	453,821
1965	30,073	251,635	281,708
1966	26,567	2,733,963[b]	2,760,530
1967	22,823	1,130,561[b]	1,153,384
	TOTAL - 506,070	TOTAL - 5,387,941	SUB TOTAL -5,666,882
			TOTAL ACREAGE -6,102,441

---

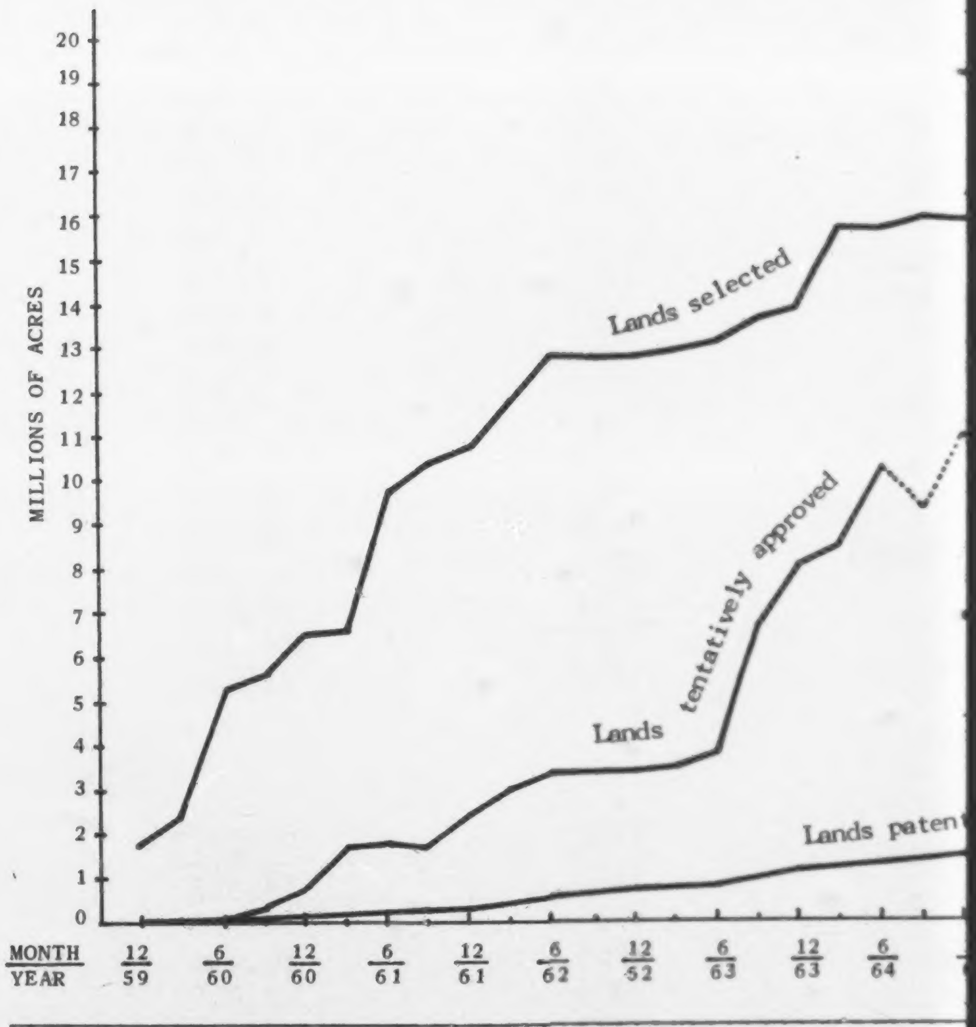
[a] Incomplete, prior to 1944.

[b] Includes 103,063 Mineral Estate

Source: U. S. Department of Interior, Bureau of Land Management, Division of Lands and Minerals, Anchorage, Alaska.

FIGURE V-11

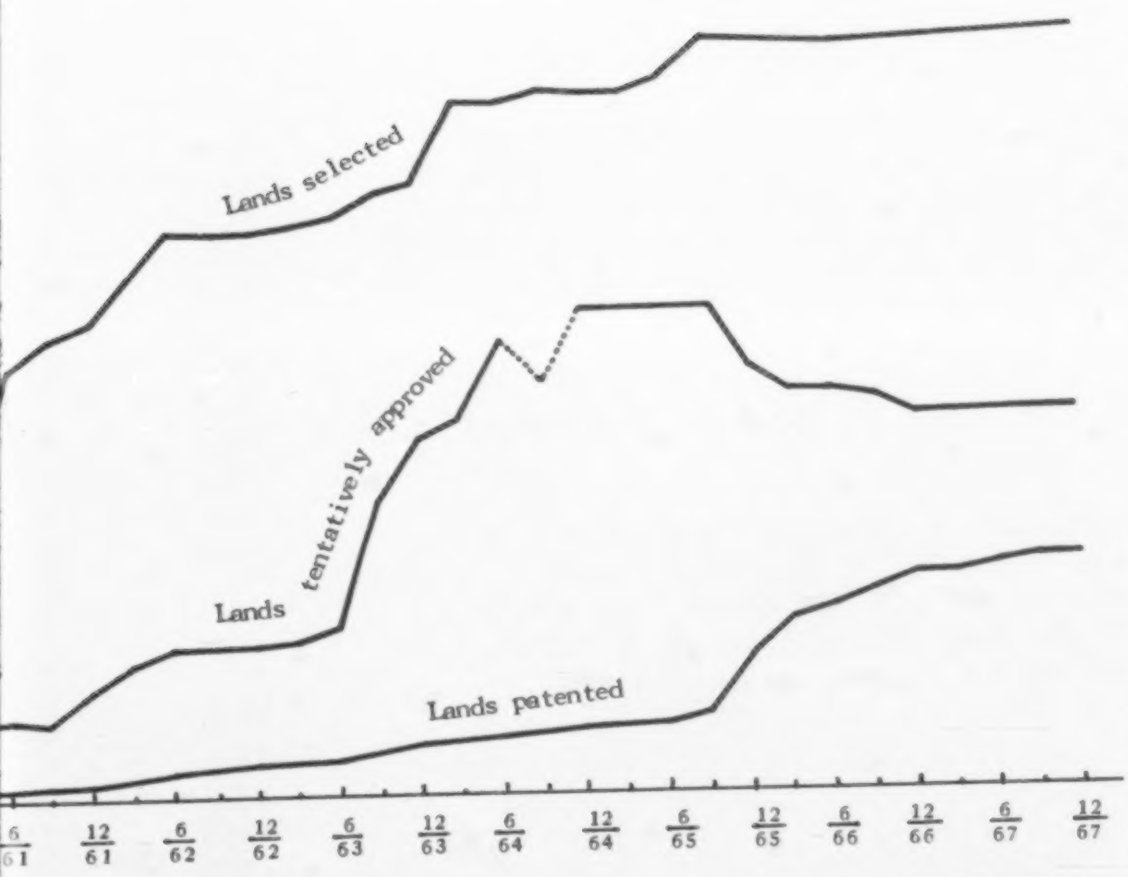
LANDS SELECTED BY THE STAT
DECEMBER 31, 1967



Source: U. S. Department of Interior, Bureau of Lan
Lands and Minerals, Anchorage, Alaska.

FIGURE V-11

LANDS SELECTED BY THE STATE
DECEMBER 31, 1967



tment of Interior, Bureau of Land Management, Division of
Minerals, Anchorage, Alaska.

Alaska Native Allotment Act

As of May 21, 1968, some 15,216 acres[106] have been granted to 175 allottees under the Alaska Native Allotment Act (Figure V-12) Alaska Natives are specifically excluded from participation in the General Land Allotment Act, although lands in Alaska may be claimed under that Act in Alaska by other American Indians. The Alaska Native

FIGURE V-12

CURRENT ALLOTMENTS UNDER ALASKA NATIVE ALLOTMENT ACT BY BUREAU OF INDIAN AFFAIRS DISTRICTS

BIA District	Allotments Granted to June 30, 1967	Allotments Granted from July '67 to May '68	Total Allotments Granted to May, '68	Acreage
Anchorage	64	None	64	5,961.07
Bethel	6	1	7	138.76
Fairbanks	52	1	53	5.954.68
Nome	5	None	5	46.38
Southeastern	46	None	46	3,115.61
Total	173	2	175	15,216.50

Source: Records in Realty Office, U. S. Department of Interior, Bureau of Indian Affairs, Juneau Area, Juneau, Alaska, May, 1968.

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[106] Records in Realty Office, Bureau of Indian Affairs, Juneau Area Office, Juneau, Alaska.

[107] Act of May 17, 1906, 34 Stat 197, as amended by Act of August 2, 1956, 70 Stat 954.

[108] *Report to the Secretary of the Interior by the Task Force on Alaska Native Affairs*, December 28, 1962., p. 59.

[109] See Figure V-11.

Allotment Act as amended in 1956[107] allows the head of a family to obtain an allotment of 160 nonmineral acres upon proof of substantial, continuous use and occupancy for five years. Such lands are inalienable and not subject to taxation. Unlike lands acquired in Native townsites there is no provision which allows the allottee to petition for an unrestricted deed. The lands only become freely alienable and taxable after transfer from the original allottee. Commenting that this Act was a combination of the General Allotment Act of 1887 and standard American homestead laws, the Task Force appointed in 1962 to investigate Native affairs in Alaska stated:

> "...the necessity for this legislation arises from the fact that Indians in Alaska are not confined to reservations as they are in the several States, but they live in villages and small settlements along the streams where they have their little homes upon land to which they have no title." [108]

The allotments need not be in contiguous tracts but may be in as many as four separate tracts not to exceed 160 acres in all. Until the claim is perfected they are not inheritable, and although extended to National Forests, where determination has been made that the lands are chiefly valuable for agriculture and grazing, the qualifying occupancy, by Forest Service regulation, must have accrued before the creation of the national forest.

The process is slow and fraught with defeat for many. The Bureau of Indian Affairs with a minimal staff is required to certify to the location of the posts staking the claim as well as the occupancy of the claimant. There are two realty officers in the Bureau of Indian Affairs in Juneau, one in Anchorage and one in Fairbanks, and the problems of distance, terrain and lack of travel funds are also great.

In the first 54 years of the application of the 1906 Act only 80 allotments were approved. In the past seven or eight years 95 additional applications have been approved. Until statehood there was little incentive for even those Natives informed of their rights under the law to limit themselves to 160 acres when, by custom, they had been able to move freely to wherever food supplies were greatest. Also, until recent regulations and policy changes of the Bureau of Land Management, liberalizing the interpretation of "substantial continuous use" to include fish camps, berrying, and hunting grounds where there was little evidence "on the ground" that the claimant had used the property, many claims failed. More than 1,000 allotments are now pending. Their perfection has also been slowed down by the pending land claims and protests.[109]

Native Townsites

Carved out of the public domain are 32 Native townsites where deeds have been issued in restricted and unrestricted status. On June 30, 1967, 786 owners held restricted deeds to that many townsite lots, and it is estimated that unrestricted deeds were held by 1,400 village residents.[110] Sixty-one Native villages have been surveyed by the Bureau of Land Management and others are planned for future survey.[111] Less than 500 acres are included in present Native townsite ownership.

The Townsite Act of 1926[112] as amended by Act of February 26, 1948 (62 Stat 35), providing for the issuance initially (or upon application) of unrestricted deeds is the authority for issuance of townsite lots to the head of the household living thereon.

Claims, Entries and Selections

Claimed or entered lands are those where settlement and appropriation under the land laws have occurred but patent has not yet been issued. Filing of notices with the Bureau of Land Management has been required since 1950 and there are estimated to be about 250-300 thousand acres in this category. Most of these lands are located on the fringes of state selected lands and in the existing transportation corridors. These are lands acquired under the Homestead Act (extended to Alaska in 1898),[113] the Trade and Manufacturing Site Act[114] and the Small Tract Act.[115]

Other lands in process of acquisition include mining claims located under the 1872 General Mining Act. These are recorded in local recording offices and with the State of Alaska. No recording, however, is made with the Bureau of Land Management. Individual mining claims scattered over the entire state probably exceed 100,000 in number. Where regional land status is shown in the following portion of this chapter it can be assumed that mining claims exist in all areas noted for placer gold or those locatable minerals sites which have reported production. It is probable that mining claims are also located in other areas of locatable minerals concentration.

Permits and leases which do not lead to title but which do reduce the title of the public domain on which they are issued include seven million acres covered by mineral leases and/or prospecting permits. Some eleven million acres on the Seward Peninsula are leased for reindeer grazing by Natives, with another two million acres--principally in the Kodiak and Aleutian Island Areas--leased for other grazing purposes.

FIGURE V-13

SURVEY STATUS OF NATIVE TOWNSITES
BY REGION
1968

Region	Villages Total	Villages Surveyed	Deeds Issued	Survey Proposed
Arctic Slope	5	2	1	3
Bering Straits	26	10	3	7
Bering Sea	2			2
Southwest Coastal	41	10	2	18
Koyukuk-Lower Yukon	13	3	2	8
Upper Yukon Porcupine	11	5	2	4
Tanana	6	2	2	0
Upper Kuskokwim	10	1	1	2
Bristol Bay	17	8	2	6
Aleutian	14	2	2	3
Kodiak	10	3	0	5
Cook Inlet	6	2(a)	2	2
Copper River	4	2	0	1
Gulf of Alaska	3	1	0	2
Southeastern	10	10(b)	9	0
	178	61	28	63

(a) Includes railroad townsite at Cantwell.
(b) Includes Metlakatla on Annette Island Reservation.

Source: Information furnished by Division of Lands and Minerals, Bureau of Land Management, and the office of the Townsite Trustee, Anchorage, Alaska, May, 1968. Current place maps in Chapter III, *supra*, reflect the survey status of each village.

Figure V-14 illustrates the proportionate ownership and use of the lands of Alaska. It also portrays the proportion of lands under protest. The location of villages, withdrawn areas, public domain and Native protest areas is set out in the regional maps which follow.

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[110] Records in Realty Office, Bureau of Indian Affairs, Juneau Area Office, Juneau, Alaska.

[111] See Figure V -13.

[112] Act of May 25, 1926, 44 Stat 629.

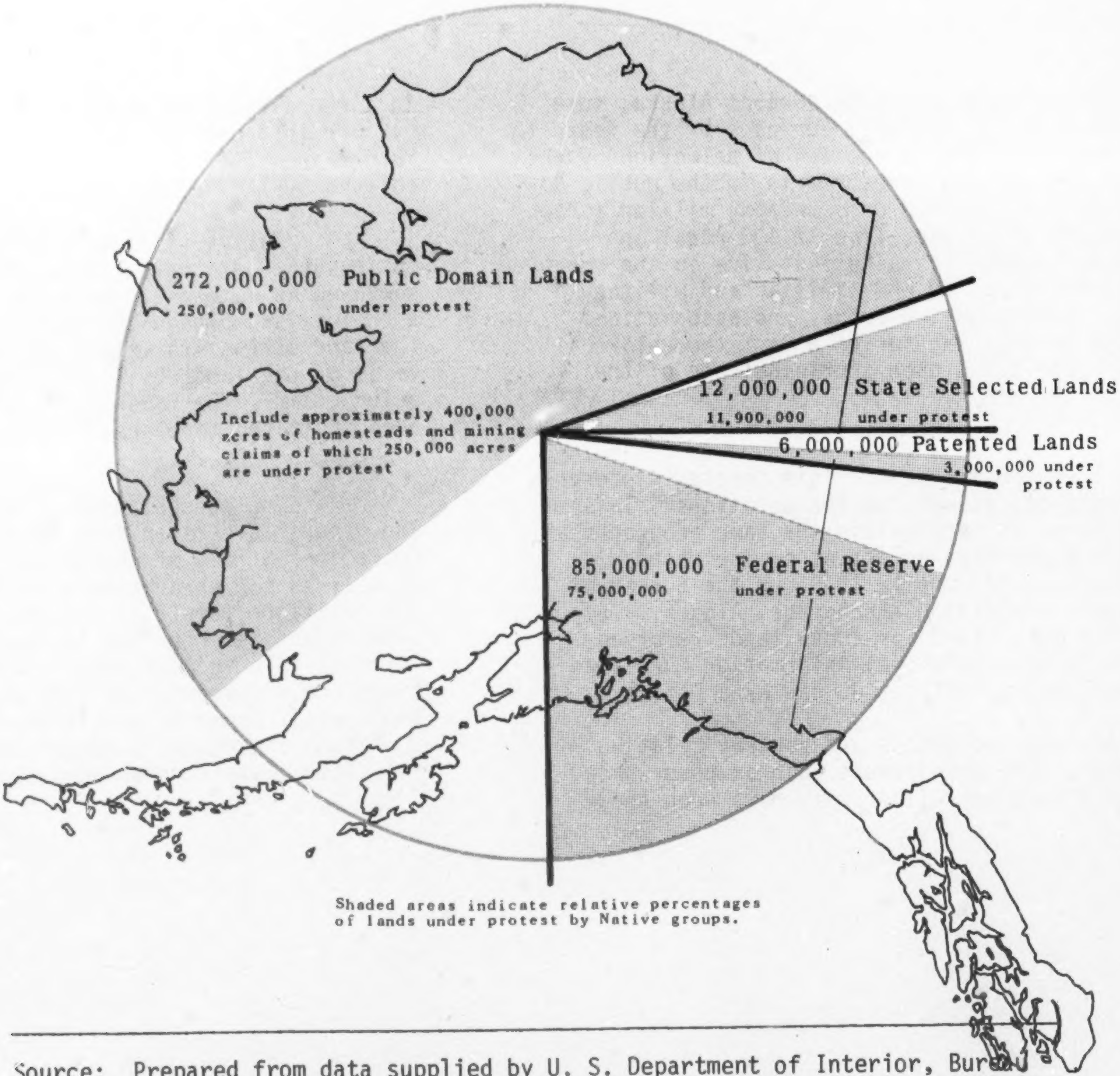
[113] Act of May 14, 1898, 30 Stat 412.

[114] Act of May 14, 1898, 30 Stat 413, as amended by Act of August 23, 1958, 72 Stat 730.

[115] Act of June 1, 1938, 52 Stat 609, as most recently amended by Act of June 8, 1954, 68 Stat. 239.

FIGURE V-14

LAND OWNERSHIP OF ALASKA
AFFECTED BY NATIVE PROTESTS, JUNE, 1968



Shaded areas indicate relative percentages of lands under protest by Native groups.

Source: Prepared from data supplied by U. S. Department of Interior, Bureau of Land Management, Division of Lands and Minerals, Anchorage, Alaska.

PRESENT STATUS OF LANDS: REGIONALLY

Of the approximate 375 million acre land area of Alaska, some 85 million acres have been withdrawn for specific purposes by the federal government, and eighteen million acres are in process of selection by the State of Alaska. An estimated 270 million acres remain in the public domain. On much of this public domain land and on some four million acres of federal reserves designated for their use, live 37,400 rural and village Alaska Natives. Another 15,600 Alaska Natives live in the urban areas of Alaska where most of the other 200,000 civilian and military non-Native Alaskans also live. Alaska Native groups and associations have claimed and filed protests to the transfer of almost the entire state. The claims and protests are based upon aboriginal use of the lands.

Earlier chapters have presented a regional theme of the relationship of Alaska Natives to their environment. This chapter's presentation of land ownership and control, as well as the petitions, claims and protests made by Alaska Natives is made within the same geographical boundaries. The status of land ownership, unless otherwise noted, is derived from statistics furnished as of June 1, 1968, by the Bureau of Land Management, Lands and Minerals Division, Anchorage, Alaska. Computations with respect to Native-owned lands or those lands reserved for Native use have been refined from additional information furnished by the Bureau of Indian Affairs, Realty Office, Juneau Area Office.

Every attempt has been made to locate and portray relative acreages with accuracy. However, some withdrawals such as power site, navigation site, and power classification withdrawals have been shown

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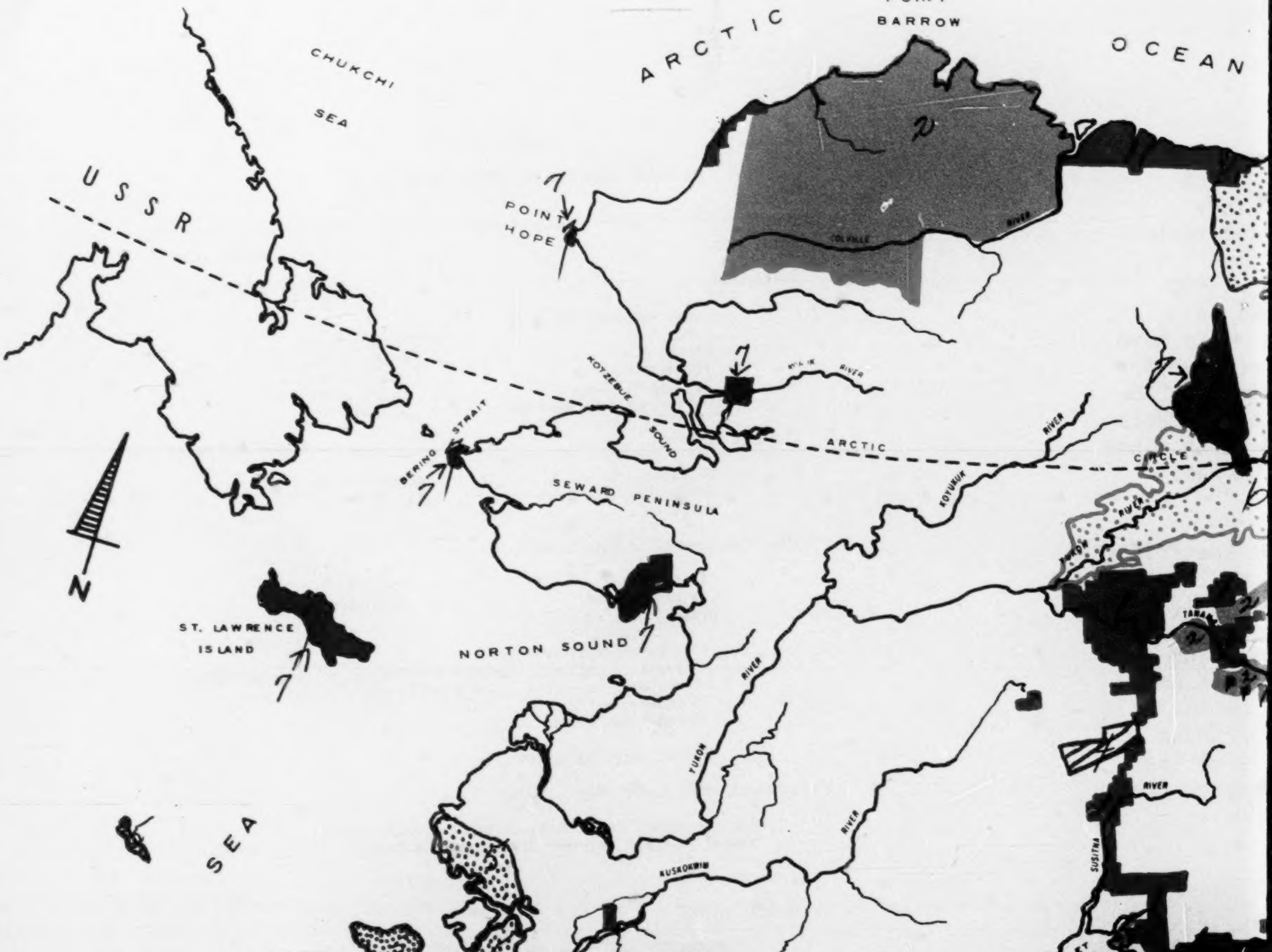
in a representative manner only. Bracketed acreages are those covered by more than one type of federal withdrawal. For example, in the Upper Yukon-Porcupine region the Chandalar Native Reserve is completely covered by the Rampart Power Site Classification Withdrawal also shown.

Native villages are located on the maps which follow, but their survey status--that is whether or not the village has been surveyed as a townsite or deeds have been issued to townsite lots therein--is shown on the Current Native Places maps in Chapter III. The land status statistics which follow refer to relative mineral value of the lands by indicating mineral leases and locatable minerals under claim. The location of these leases and locations, however, has been indicated more specifically on the Locatable and Leaseable Resources maps in Chapter IV.

The presentation of petitions filed by various Native villages and groups is derived from copies of petitions on file in the Tribal Operations Office of the Bureau of Indian Affairs, Juneau Area Office, as well as copies on file with the Bureau of Land Management. Most of the petitions were filed in the late 1940's and early 1950's. Many are undated and describe the claimed lands in such a general manner that it is impossible to plat them. With the caveat that the maps showing petitions are representative only and should be used to indicate approximate land areas, range of subsistence use and the existence of a formal claim predating statehood, a comparison can be made of the areas of Native use and claim against other uses and ownership of Alaska.


POINT BARROW
ARCTIC
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CHUKCHI SEA
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POINT HOPE
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KOTZEBUE SOUND
NOATAK RIVER
BERING STRAIT
ARCTIC CIRCLE
KOYUKUK RIVER
YUKON RIVER
SEWARD PENINSULA
N
ST. LAWRENCE ISLAND
NORTON SOUND
YUKON RIVER
TANANA
RIVER
SUSITNA
BERING SEA
KUSKOKWIM
RIVER
NUNIVAK ISLAND
KUSKOKWIM BAY
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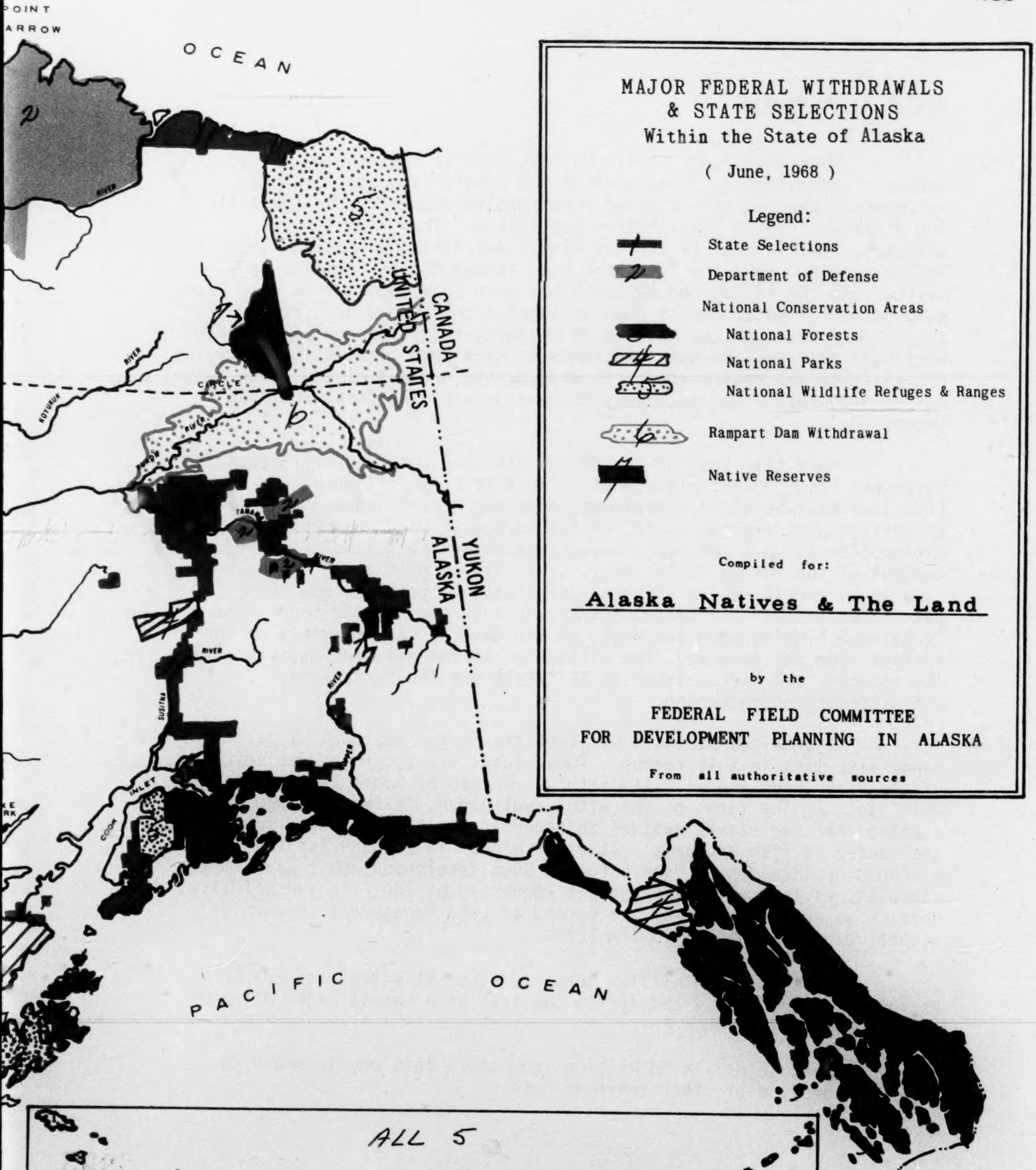
FIGURE: V - 15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ALASKA
4
RIVER
SUSITNA
RIVER
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COPPER RIVER
COOK INLET
4
PACIFIC OCEAN
ALL 5
ALEUTIAN ISLANDS
805

MAJOR FEDERAL WITHDRAWALS
& STATE SELECTIONS
Within the State of Alaska

(June, 1968)

Legend:

1 State Selections
2 Department of Defense
National Conservation Areas
3 National Forests
4 National Parks
5 National Wildlife Refuges & Ranges
6 Rampart Dam Withdrawal
7 Native Reserves

Compiled for:

Alaska Natives & The Land

by the

FEDERAL FIELD COMMITTEE
FOR DEVELOPMENT PLANNING IN ALASKA

From all authoritative sources

IGURE: V - 15

Arctic Slope Region

More than 2,500 Alaska Natives live in this region which embraces approximately 15 percent of the area of the state. They represent 7 percent of estimated rural Native population in the state and 4 percent of the total Native population. They live in five villages. The largest is Barrow, with a population exceeding 1,600 Native people. Townsite lots have been issued to 196 families in Barrow, and the village of Kaktovik has been surveyed, but no lots have been issued to date. Point Hope is located on a 6,000-acre reserve for school purposes, and the Natives of Wainwright may use coal from a 200-acre coal reserve. No Native allotments have been granted in the region, but claim to the entire region is made by the protest of the North Slope Native Association and to a 400,000-acre area by the Anaktuvuk Pass group.

More than half of the region has been withdrawn for specific purposes. The largest withdrawal of more than 23 million acres, Naval Petroleum Reserve No. 4, continues under the general management, insofar as surface uses are concerned, of the Bureau of Land Management. Exploration for oil and gas, however, is under the jurisdiction and control of the United States Navy. This division of authority is not clear-cut, and there are complex jurisdictional problems now being determined between the Department of the Interior and the Department of Defense hinging upon the right of the Navy to exclude users of the surface from the reserve. The village of Barrow has been excepted from the reserve, and Barrow inhabitants freely use its surface for subsistence food gathering.

Two-thirds of the 9 million-acre Arctic National Wildlife Range also lies in this region. These lands are under the jurisdiction of the U. S. Fish and Wildlife Service, Bureau of Sport Fisheries and Wildlife. By the terms of the withdrawal order, it remains open to subsistence use for Alaska Natives in accordance with state laws regulating the taking of fish and game. It is also open to oil and gas leasing, although no leases have been issued. Such development must conform to stipulations for surface management requested by the Fish and Wildlife Service as well as those of the Bureau of Land Management concerning mineral exploration in wildlife areas.

Most of the 2 million acres of state-selected land adjoin Petroleum Reserve No. 4 and are in the area of a recent major oil and gas discovery at Prudhoe Bay.

Because of its 56 million-acre size, this map is shown at one-half the size of other regional maps.

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FIGURE V-16

CURRENT LAND STATUS, ARCTIC SLOPE REGION

Total Area		56,500,000 acres
Withdrawals		29,009,500 acres
Naval Petroleum Reserve No. 4	23,000,000 acres*	
Arctic N.W.R.	6,000,000 acres	
Pt. Hope N.R.	6,500 acres	
Pt. Lay Military	3,000 acres	
Wainwright Coal Reserve	(200)acres	
State Selections		2,050,000 acres
Selected only	400,000 acres	
Tentatively Approved	1,650,000 acres	
Patented	0	
Other Patented or Claimed Lands		
Patented	1,000 acres	
Claimed/Entered	1,000 acres	
Mineral leasing		

1 area--federal coal lease
3 small, 1 medium, 1 large area--federal oil and gas leases
1 medium area--state oil and gas leases
6 known gas fields
3 known gas fields

Mineral locations--none

Petitions under Act of May 1, 1936:

Within region: Point Hope, Point Lay, Wainwright
Partially within region: Kivalina, Fort Yukon

Native Protests:

Within region

F-035252, Anaktuvuk Pass, 422,500 acres
F-035257, North Slope Native Association, 58,017,300 acres

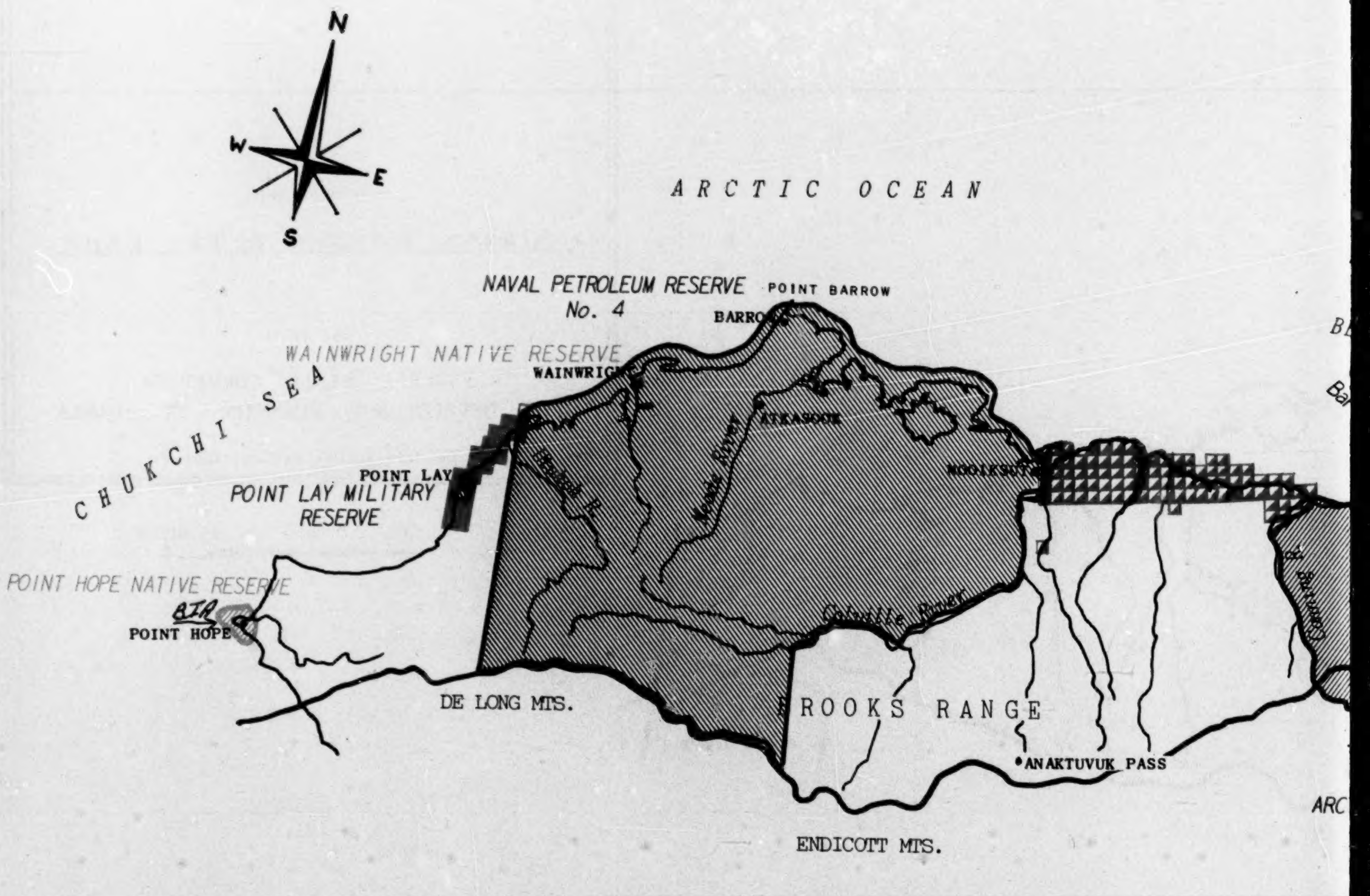
Overlap from adjacent regions

F-035292, Chalkyitsik, see Yukon Flats region
F-035294, Northwest Native Association, see Bering Sea region
F-28 , Veretie-Arctic, see Yukon Flats region

Public Domain--Estimate	25,400,000 acres

Source: U. S. Department of the Interior, Bureau of Land Management, Division of Lands and Minerals, Anchorage, Alaska.

*Department of Defense gives a total of 23,680,000 acres.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ARCTIC OCEAN
NAVAL PETROLEUM RESERVE No. 4
POINT BARROW
BARROW
WAINWRIGHT NATIVE RESERVE
WAINWRIGHT
CHUKCHI SEA
POINT LAY
POINT LAY MILITARY RESERVE
ATKASOOK
Meade River
NOOIKSUT
Colville River
POINT HOPE NATIVE RESERVE
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DE LONG MTS.
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ANAKTUVUK PASS
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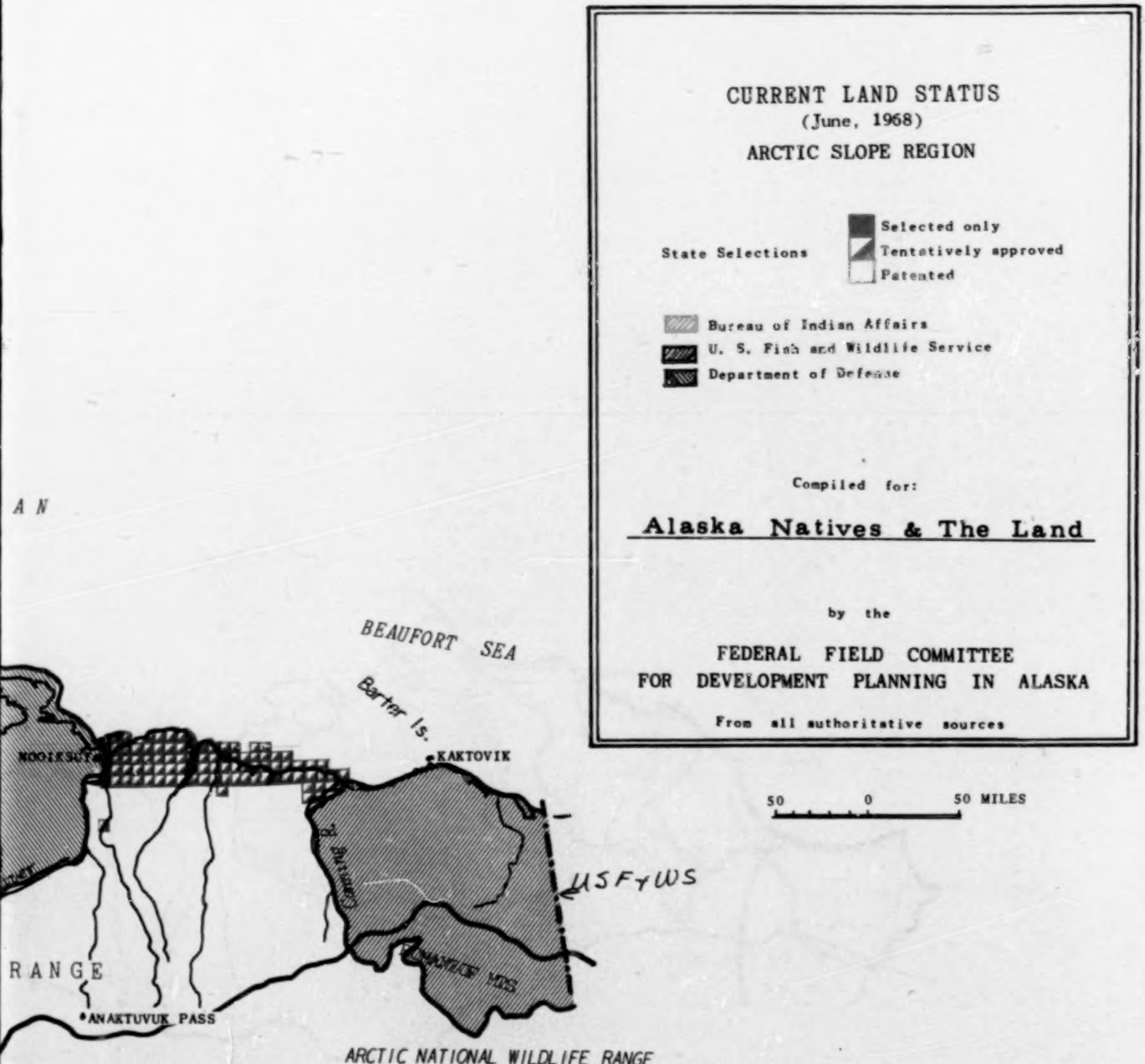
FIGURE V - 17



CURRENT LAND STATUS
(June, 1968)
ARCTIC SLOPE REGION

Compiled for:

Alaska Natives & The Land

by the

FEDERAL FIELD COMMITTEE
FOR DEVELOPMENT PLANNING IN ALASKA

From all authoritative sources

State Selections
Selected only
Tentatively approved
Patented
Bureau of Indian Affairs
U. S. Fish and Wildlife Service
Department of Defense
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BEAUFORT SEA
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FIGURE V - 17

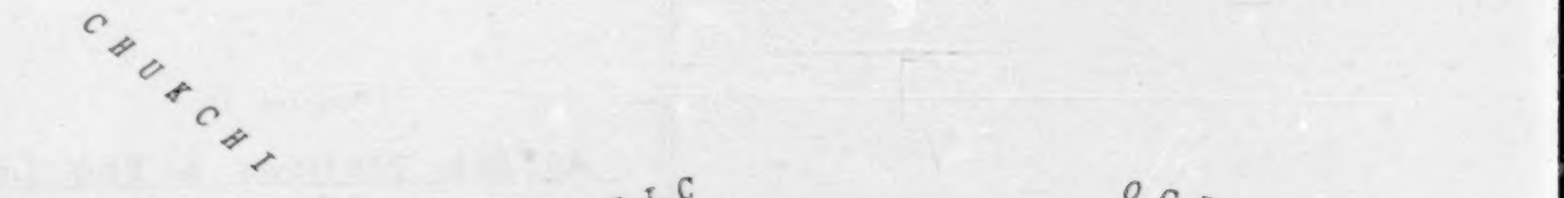
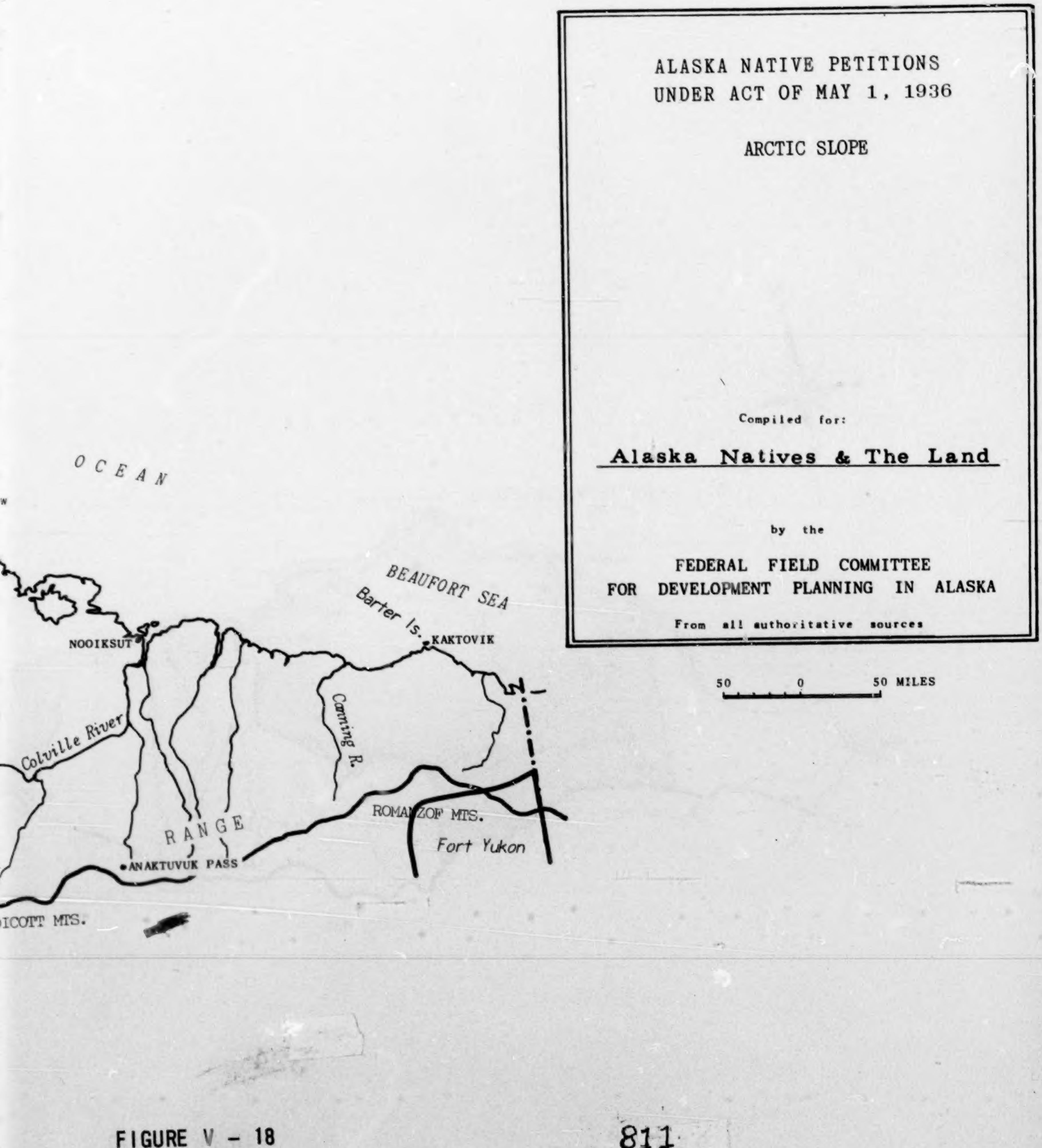

CHUKCHI SEA
ARCTIC
OCEAN
POINT BARROW
BARROW
WAINWRIGHT
ATKASOOK
Meade River
Wainwright
Utukok R.
POINT LAY
Point Lay
NOOIKSUT
Colville River
POINT HOPE
Point Hope
BROOKS
RANGE
DE LONG MTS.
Kivalina
ANAKTUVUK PASS
ENDICOTT MTS.

FIGURE V - 18



ALASKA NATIVE PETITIONS
UNDER ACT OF MAY 1, 1936

ARCTIC SLOPE

Compiled for:

Alaska Natives & The Land

by the

FEDERAL FIELD COMMITTEE
FOR DEVELOPMENT PLANNING IN ALASKA

From all authoritative sources

50 0 50 MILES
OCEAN
BEAUFORT SEA
Barter Is.
KAKTOVIK
NOOIKSUT
Colville River
Canning R.
RANGE
ANAKTUVUK PASS
ROMANZOF MTS.
Fort Yukon
ICOTT MTS.

FIGURE V - 18

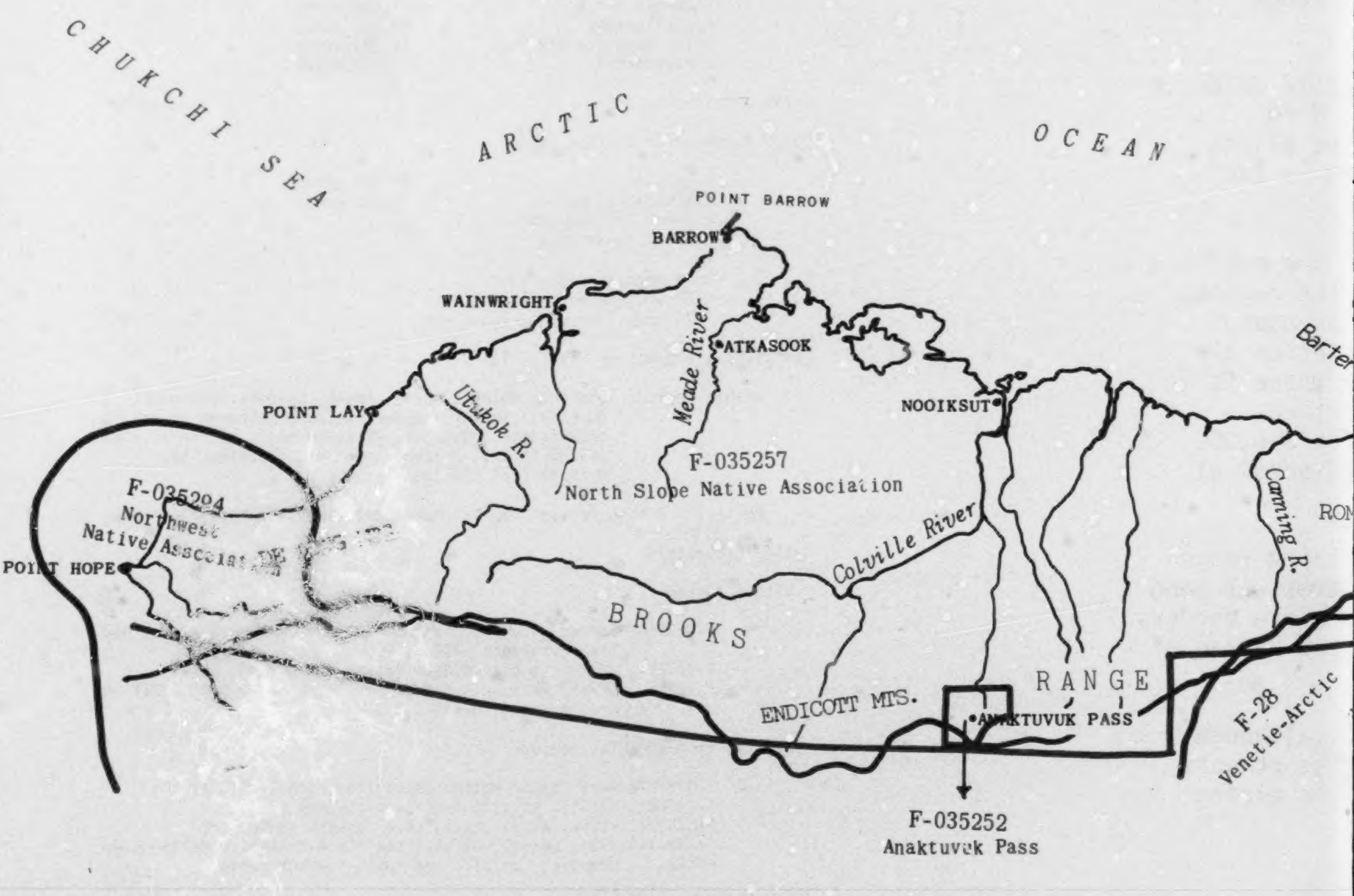
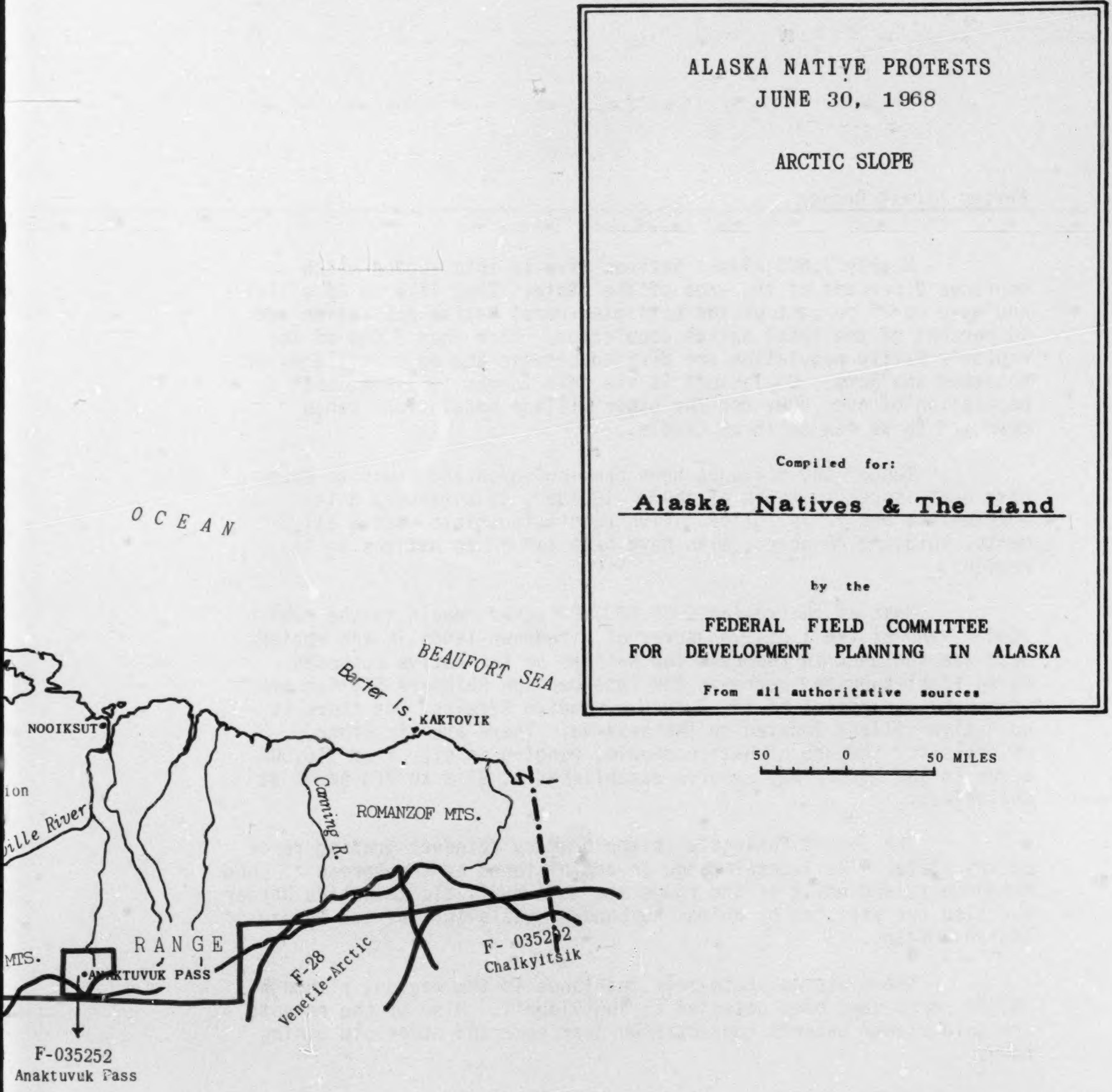

CHUKCHI SEA
ARCTIC
OCEAN
POINT BARROW
BARROW
WAINWRIGHT
Meade River
ATKASOOK
Barter
NOOIKSUT
POINT LAY
Utukok R.
F-035257
North Slope Native Association
F-035294
Northwest
Native Associat
POINT HOPE
Canning R.
ROM
Colville River
BROOKS
RANGE
ENDICOTT MTS.
ANAKTUVUK PASS
F-28
Venetie-Arctic
F-035252
Anaktuvek Pass

FIGURE V - 19



ALASKA NATIVE PROTESTS
JUNE 30, 1968

ARCTIC SLOPE

Compiled for:

Alaska Natives & The Land

by the

FEDERAL FIELD COMMITTEE
FOR DEVELOPMENT PLANNING IN ALASKA

From all authoritative sources

50
0
50 MILES
OCEAN
BEAUFORT SEA
Barter Is.
KAKTOVIK
NOOIKSUT
ion
ville River
Canning R.
ROMANZOF MTS.
RANGE
MTS.
ANAKTUVUK PASS
F-28
Venetie-Arctic
F- 035292
Chalkyitsik
F-035252
Anaktuvuk Pass

FIGURE V - 19

Bering Strait Region

Nearly 7,500 Alaska Natives live in this region which embraces 9 percent of the area of the state. They live in 26 villages and make up 20 percent of the estimated rural Native population and 14 percent of the total Native population. More than 3,000 of the region's Native population are divided between the major villages of Kotzebue and Nome. Unalakleet is the next largest village, with a population of over 500, and the other village populations range downward to as few as 15 at Candle.

Ten of the villages have been surveyed, and townsite deeds have been issued in three of them: 18 deeds in Kotzebue, 8 in Shaktoolik, and 12 in Teller. Five restricted-title Native allotments, totaling 46 acres, also have been issued to Natives in the region.

Most of the region's 36,800,000 acres remain in the public domain; and of the 1 million acres of withdrawn lands in the region, most are included in reserves for Natives or for Native purposes. Forty-eight thousand acres in the Cape Denbigh Reindeer Station are under the management of the Bureau of Indian Affairs, but there is no Native village located on the reserve. There are six other reserves for the use of Native people, ranging in size from 316,000 acres in the Norton Bay reserve established at Elim to 870 acres at Unalakleet.

The Seward Peninsula is the primary reindeer grazing range of the state. The federal range is administered by the Bureau of Land Management, and units of the range are made available to Native herders who also are assisted by animal husbandry specialists of the Bureau of Indian Affairs.

There are no state-selected lands in the region, although 36,000 acres have been patented to individuals. Many of the patents are gold placer patents concentrated near Nome and other old mining towns.

s region which
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than 3,000 of the
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and townsite deeds
otzebue, 8 in
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o Natives in the

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Native purposes.
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are six other
size from 316,000
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ndeer grazing range
by the Bureau of Land
able to Native herders
ists of the Bureau of

e region, although
Many of the patents
d other old mining

FIGURE V-20

CURRENT LAND STATUS, BERING STRAIT REGION

Total Area		36,800,000 acres
Withdrawals		540,000 acres
Norton Bay N.R. (Elim)	316,000 acres	
Kobuk N.R. (Noorvik)	144,000 acres	
Cape Denbigh Reindeer Station	48,000 acres	
Unalakleet Military	8,000 acres	
Wales N.R.	7,000 acres*	
Pt. Spencer Military	3,000 acres	
Little Diomede N.R.	3,000 acres	
Chamisso N.W.R.	1,000 acres	
Miscellaneous	10,000 acres	
White Mountain N.R.	(1,200)acres	
Unalakleet N.R.	(870)acres	
State Selections--none		0 acres
Other Patented or Claimed Lands		
Patented	36,000 acres	
Claimed/Entered	6,300 acres	
Mineral leasing--none		
Mineral locations		

78 areas--gold placer
23 areas--known production
70 areas--probable locations

Petitions under Act of May 1, 1936:

Within region: Deering, Golovin, Elim, Koyuk, Selawik, Shungnak, Buckland, Teller Mission, Wales-Shishmaref (platting approximate), Noorvik, White Mountain, Diomede, King Island, Kiana, Kotzebue, Noatak, Kivalina, St. Michael (not platted)

Partially within region: Holikachuk, Unalakleet, Kaltag, Point Hope

Native Protests:

Within region

F-028756,	Eskimo people of Noatak, Noorvik, Kiana, Selawik, and other villages, 100 acres
F-035294,	Northwest Native Association, 29,952,000 acres
F-166	Seward Peninsula Native Association and Arctic Native Brotherhood, 10,414,100 acres

Overlap from adjacent regions

F-035257,	North Slope Native Assocation, see Arctic region
F-035268,	Huslia, et al., see Yukon-Koyukuk region
F-035271,	Koyuk, et al., see Yukon-Koyukuk region
F-108 (AA,373),	Bethel, et al., see Yukon-Kuskokwim Delta region
F-427 ,	Grayling, et al., see Yukon-Koyukuk region

Public Domain--Estimate 36,200,000 acres

Source: U. S. Department of the Interior, Bureau of Land Management, Division of Lands and Minerals, Anchorage, Alaska.

*The order establishing the reserve states that 14,000 acres of water are also included.

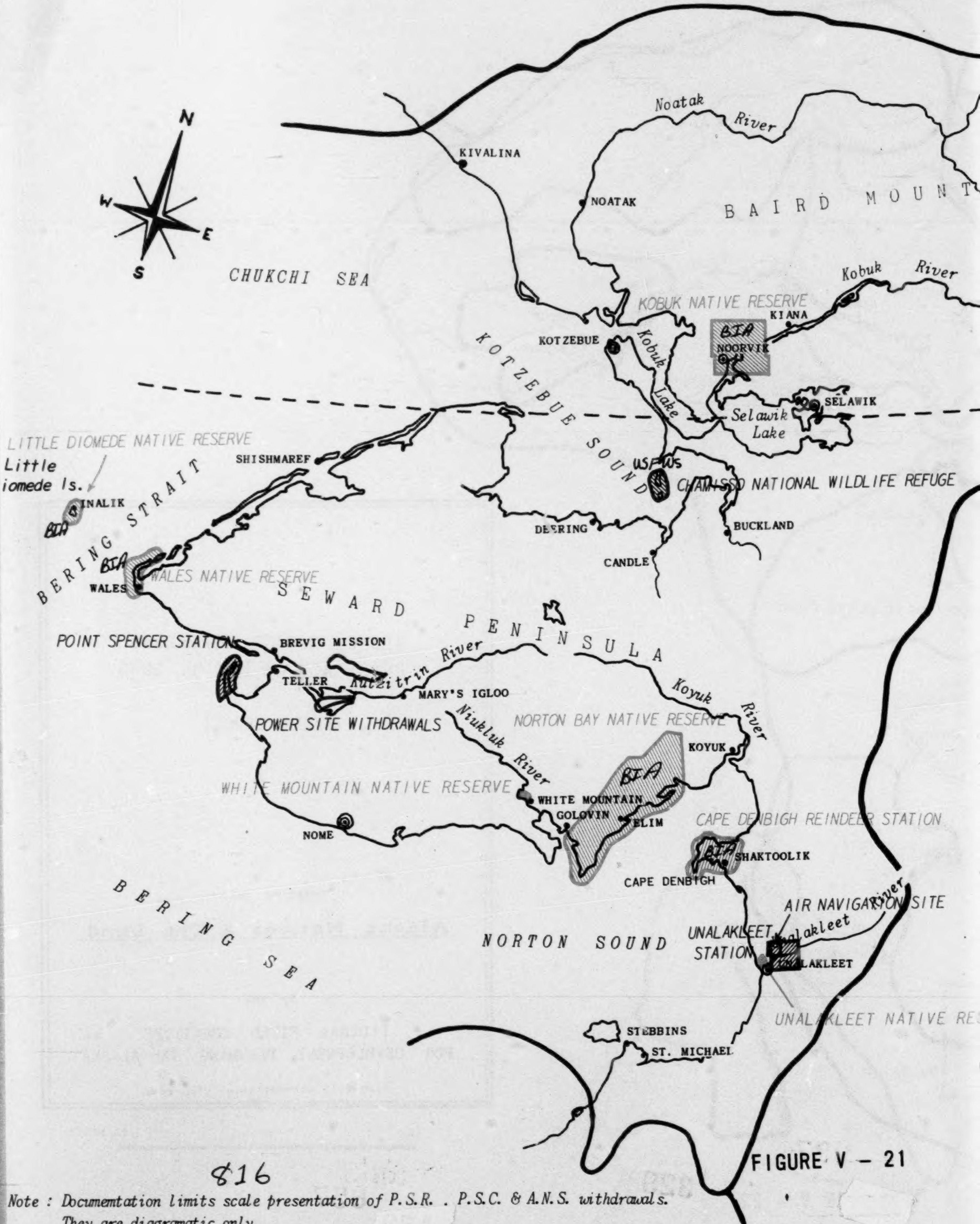
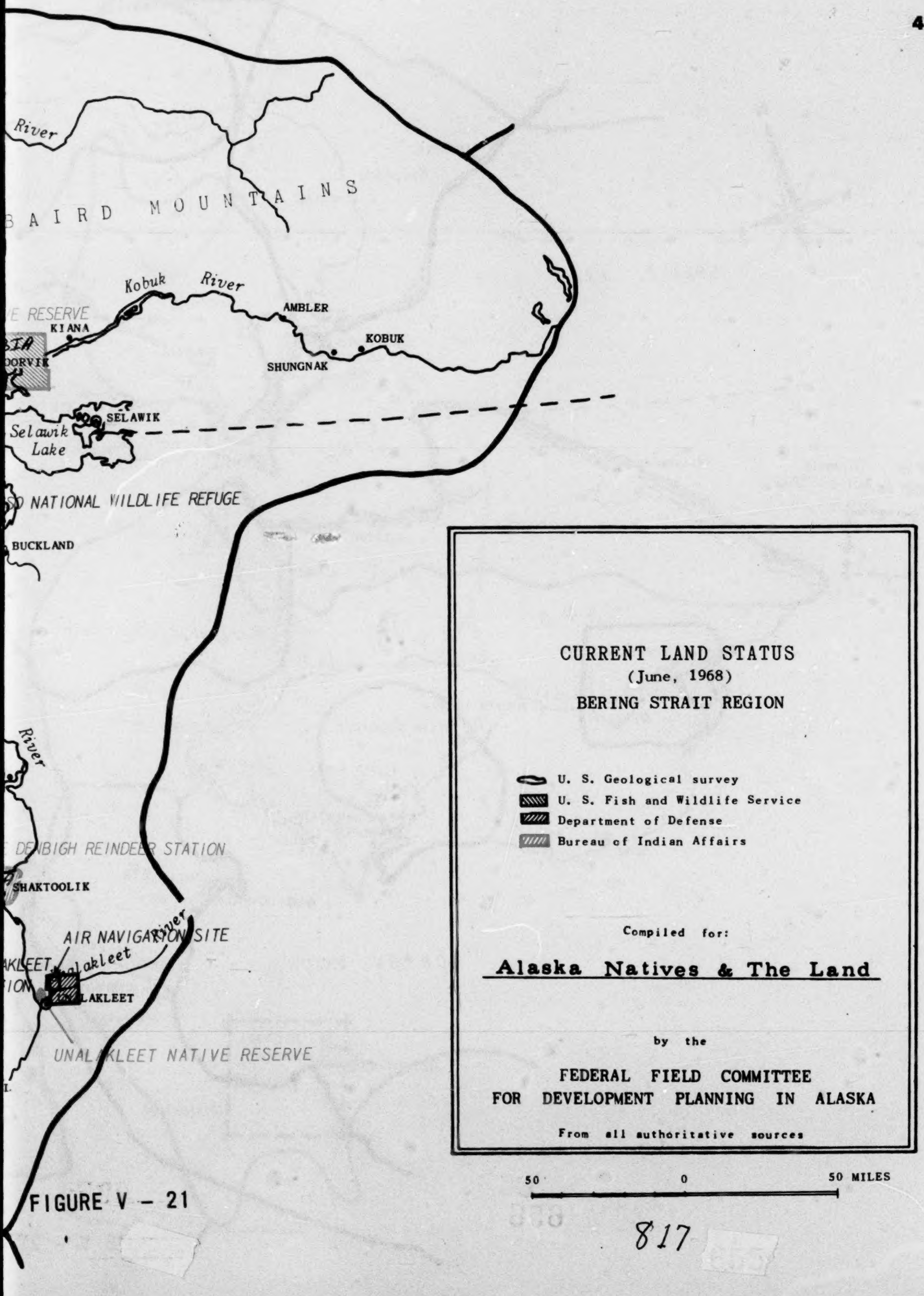

N
W
E
S
CHUKCHI SEA
Noatak River
KIVALINA
NOATAK
BAIRD MOUNT
Kobuk River
KOBUK NATIVE RESERVE
KIANA
BIA
NOORVIK
KOTZEBUE
Kobuk Lake
KOTZEBUE SOUND
Selawik Lake
SELAWIK
LITTLE DIOMEDE NATIVE RESERVE
Little Diomede Is.
INALIK
BIA
SHISHMAREF
BERING STRAIT
USFWS
CHAMISSO NATIONAL WILDLIFE REFUGE
DEERING
BUCKLAND
CANDLE
BIA
WALES
WALES NATIVE RESERVE
SEWARD PENINSULA
POINT SPENCER STATION
BREVIG MISSION
TELLER
Kuzitrin River
MARY'S IGLOO
Koyuk River
POWER SITE WITHDRAWALS
Niukluk River
NORTON BAY NATIVE RESERVE
KOYUK
BIA
WHITE MOUNTAIN NATIVE RESERVE
WHITE MOUNTAIN
GOLOVIN
ELIM
NOME
CAPE DENBIGH REINDEER STATION
BIA
SHAKTOOLIK
CAPE DENBIGH
AIR NAVIGATION SITE
Unalakleet River
BERING SEA
NORTON SOUND
UNALAKLEET STATION
UNALAKLEET
UNALAKLEET NATIVE RE
STEBBINS
ST. MICHAEL

FIGURE V - 21

816

Note : Documemtation limits scale presentation of P.S.R. . P.S.C. & A.N.S. withdrawals.
They are diagramatic only.


River
BAIRD MOUNTAINS
Kobuk River
AMBLER
KOBUK
SHUNGNAK
KIANA
E RESERVE
BIA
OORVIK
SELAWIK
Selawik Lake
D NATIONAL WILDLIFE REFUGE
BUCKLAND
River
E DENBIGH REINDEER STATION
SHAKTOOLIK
AIR NAVIGATION SITE
Unalakleet River
AKLEET
ION
LAKLEET
UNALAKLEET NATIVE RESERVE
50
0
50 MILES

CURRENT LAND STATUS
(June, 1968)
BERING STRAIT REGION

- U. S. Geological survey
- ▨ U. S. Fish and Wildlife Service
- ▨ Department of Defense
- ▨ Bureau of Indian Affairs

Compiled for:

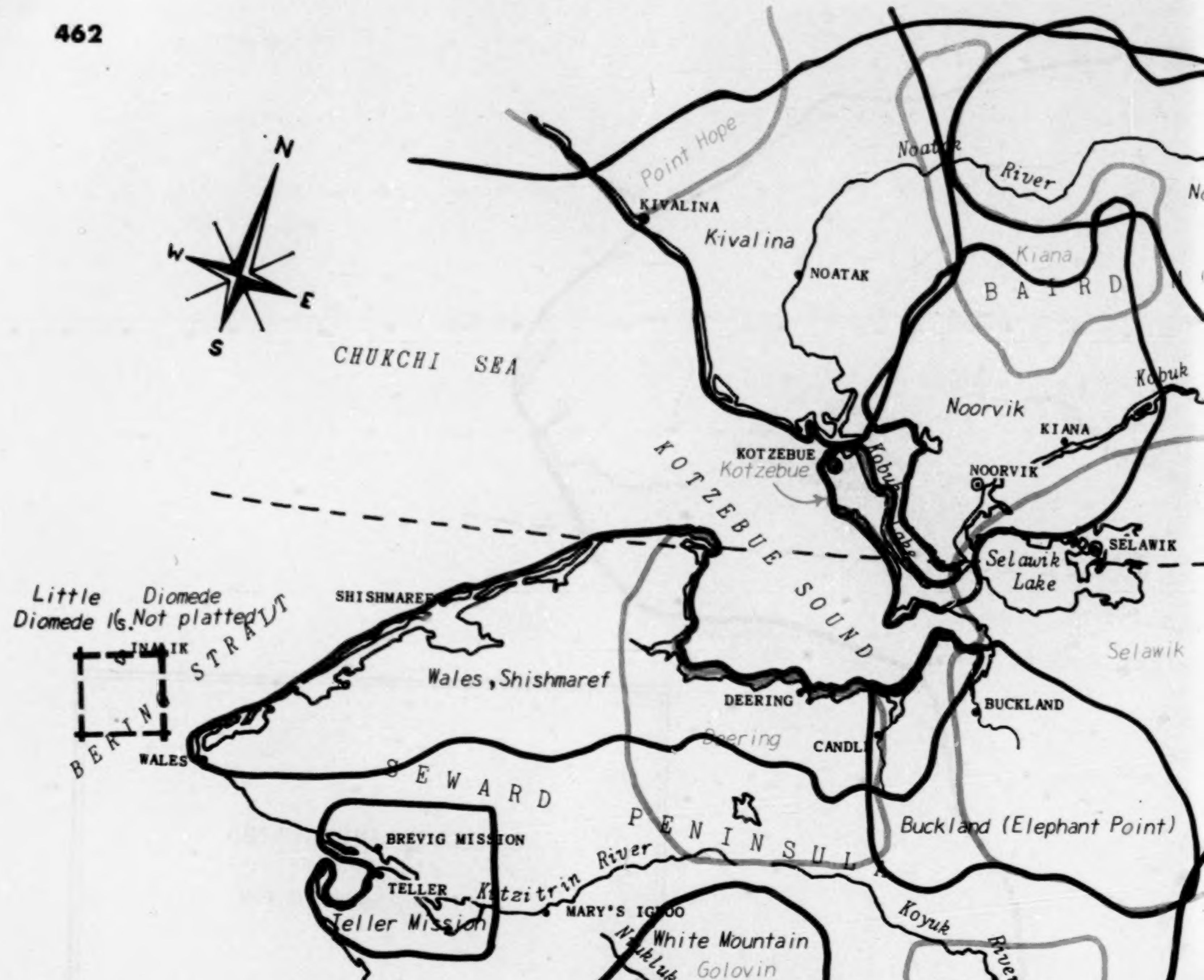
Alaska Natives & The Land

by the

FEDERAL FIELD COMMITTEE
FOR DEVELOPMENT PLANNING IN ALASKA

From all authoritative sources

FIGURE V – 21


N
W
E
S
CHUKCHI SEA
Point Hope
KIVALINA
Kivalina
NOATAK
Noatak
River
Kiana
BAIRD
Kobuk
Noorvik
KIANA
KOTZEBUE
Kotzebue
NOORVIK
KOTZEBUE SOUND
Kobuk Lake
SELAWIK
Selawik Lake
Selawik
Little Diomede Is.
Diomede
Not platted
INALIK
BERING STRAIT
SHISHMAREF
Wales, Shishmaref
DEERING
Deering
CANDLE
BUCKLAND
WALES
SEWARD PENINSULA
Buckland (Elephant Point)
BREVIG MISSION
TELLER
Teller Mission
Kuzitrin River
MARY'S IGLOO
White Mountain
Golovin
Niukluk River
Koyuk River
KOYUK
Koyuk
Elim
WHITE MOUNTAIN
GOLOVIN
ELIM
NOME
SHAKTOOLIK
CAPE DENBIGH
BERING SEA
NORTON SOUND
Unalakleet
UNALAKLEET
River
St. Michael
(Not platted)
STEBBINS
ST. MICHAEL
Unalakleet
Holikachuk

818

FIGURE V - 22

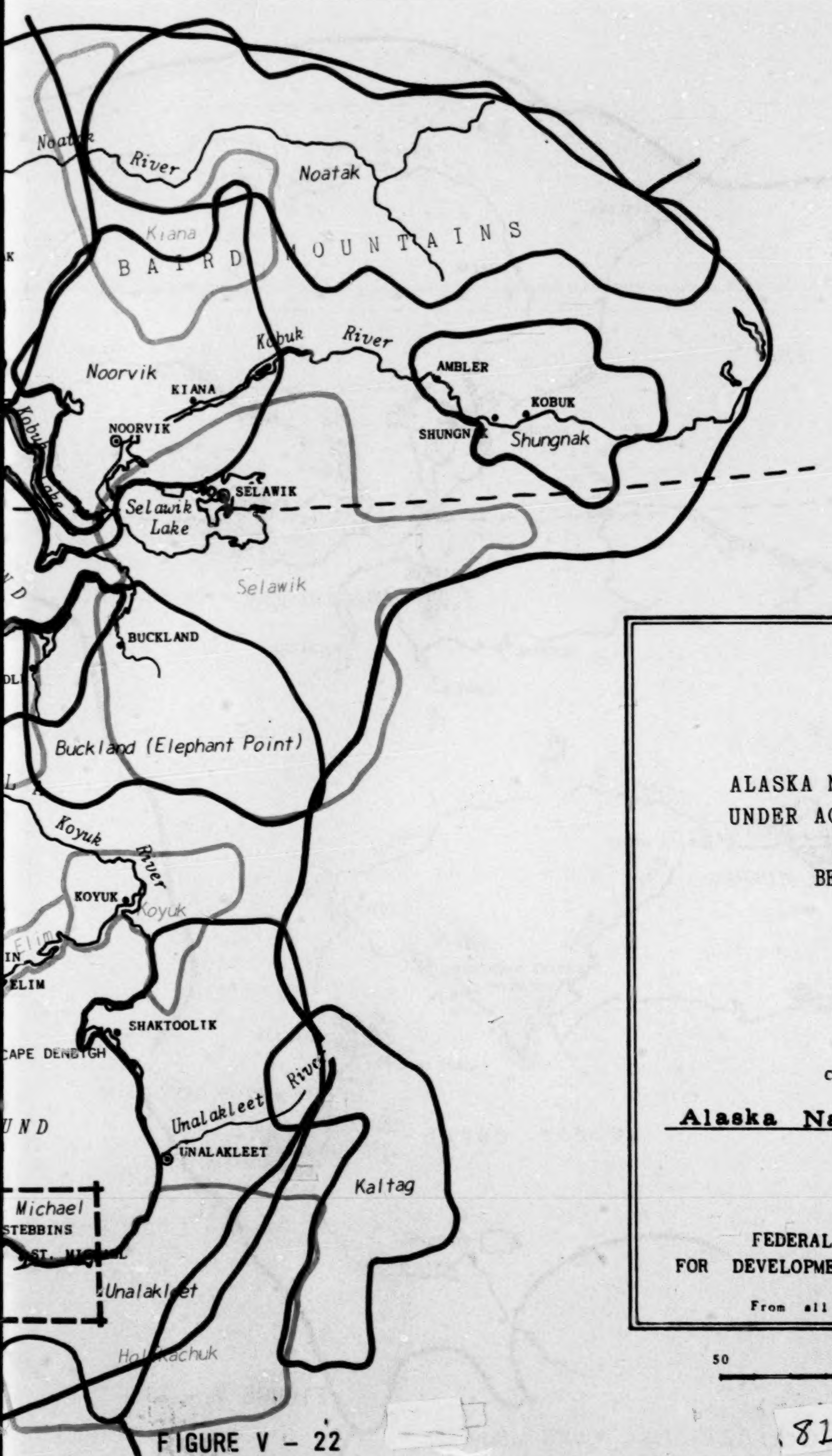

Noatak
River
Noatak
Kiana
BAIRD MOUNTAINS
Kobuk
River
Noorvik
KIANA
NOORVIK
Kobuk
Lake
AMBLER
KOBUK
SHUNGNAK
Shungnak
SELAWIK
Selawik
Lake
Selawik
BUCKLAND
Buckland (Elephant Point)
Koyuk
River
KOYUK
Koyuk
Elim
ELIM
SHAKTOOLIK
CAPE DENBIGH
Unalakleet
River
UNALAKLEET
Kaltag
Michael
STEBBINS
ST. MICHAEL
Unalakleet
Holikachuk
50
0
50 MILES

FIGURE V - 22

ALASKA NATIVE PETITIONS
UNDER ACT OF MAY 1, 1936

BERING STRAIT

Compiled for:

Alaska Natives & The Land

by the

FEDERAL FIELD COMMITTEE
FOR DEVELOPMENT PLANNING IN ALASKA

From all authoritative sources

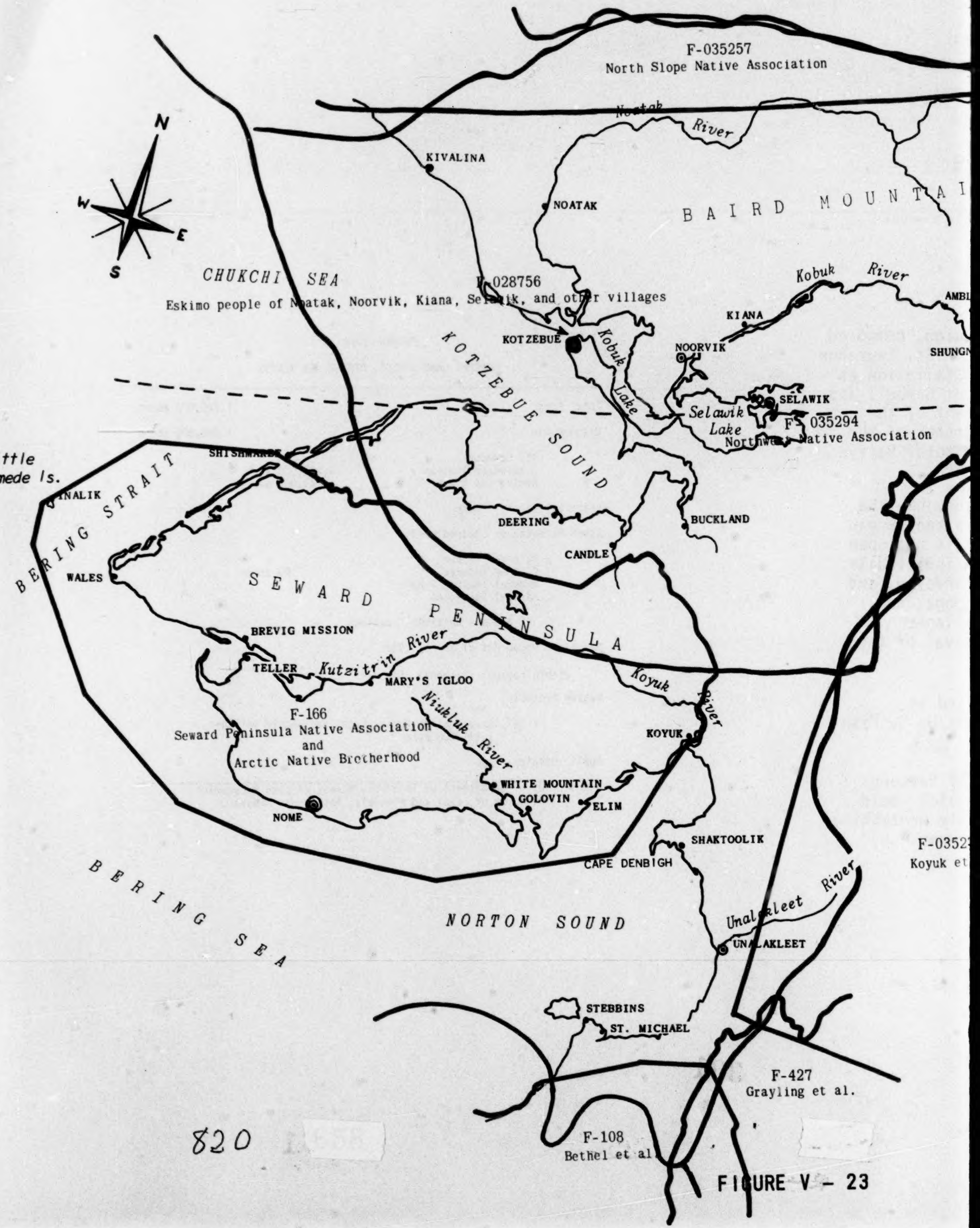
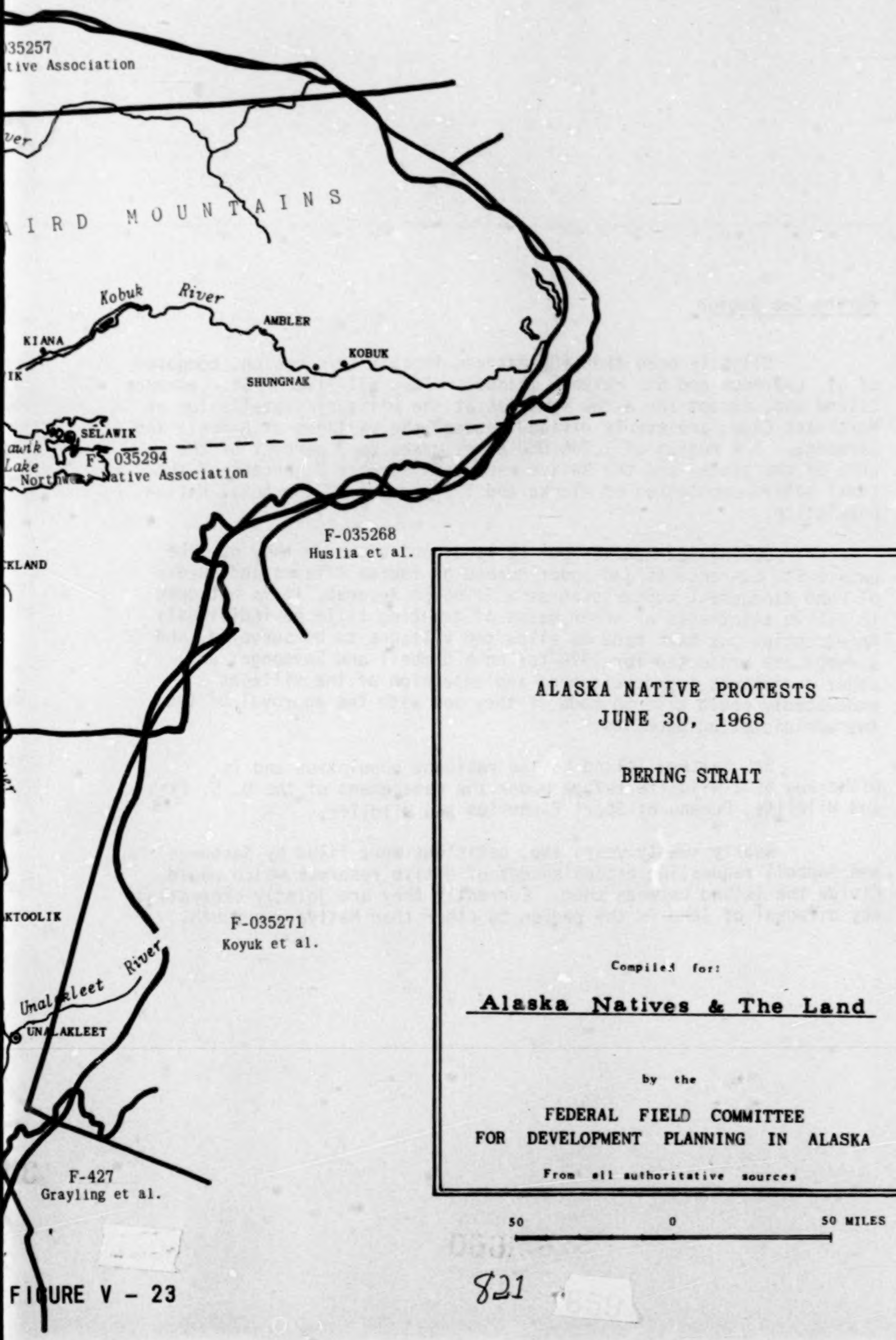

F-035257
North Slope Native Association
Noatak River
KIVALINA
NOATAK
BAIRD MOUNTAI
N
W
E
S
CHUKCHI SEA
F-028756
Eskimo people of Noatak, Noorvik, Kiana, Selawik, and other villages
Kobuk River
AMBL
KIANA
SHUNGN
KOTZEBUE
Kobuk Lake
NOORVIK
KOTZEBUE SOUND
SELAWIK
Selawik Lake
F-035294
Northwest Native Association
Little Diomede Is.
SHISHMAREF
INALIK
BERING STRAIT
DEERING
BUCKLAND
CANDLE
WALES
SEWARD PENINSULA
BREVIG MISSION
TELLER
Kutzitrin River
MARY'S IGLOO
Koyuk River
F-166
Seward Peninsula Native Association
and
Arctic Native Brotherhood
Niukluk River
KOYUK
WHITE MOUNTAIN
GOLOVIN
ELIN
NOME
SHAKTOOLIK
F-0352
Koyuk et
CAPE DENBIGH
BERING SEA
NORTON SOUND
Unalakleet River
UNALAKLEET
STEBBINS
ST. MICHAEL
F-427
Grayling et al.
F-108
Bethel et al.

FIGURE V - 23


035257
tive Association
ver
AIRD MOUNTAINS
Kobuk River
AMBLER
KIANA
KOBUK
SHUNGNAK
IK
SELAWIK
awik Lake
F 035294
Northw Native Association
F-035268
Huslia et al.
KLAND
KTOOLIK
F-035271
Koyuk et al.
Unalakleet River
UNALAKLEET
F-427
Grayling et al.
50
0
50 MILES

ALASKA NATIVE PROTESTS
JUNE 30, 1968

BERING STRAIT

Compiled for:

Alaska Natives & The Land

by the

FEDERAL FIELD COMMITTEE
FOR DEVELOPMENT PLANNING IN ALASKA

From all authoritative sources

FIGURE V - 23

821

Bering Sea Region

Slightly more than 800 Natives inhabit this region, composed of St. Lawrence and St. Matthew Islands. They all live on St. Lawrence Island and, except for a few families at the military installation at Northeast Cape, are evenly divided between the villages of Gambell and Savoonga. The region of 1,246,000 acres makes up 3 percent of the area of the state, and the Native residents compose 2 percent of the rural Native population of Alaska and 1.5 percent of the total Native population.

Bering Sea Natives own no land; and although they use the entire St. Lawrence Island under Bureau of Indian Affairs and Bureau of Land Management supervision as a Reindeer Reserve, it is not open to Native allotments or other means of granting title to individuals. An exception has been made to allow the villages to be surveyed, and surveys are projected for 1970 for both Gambell and Savoonga; and other exceptions for development and expansion of the villages undoubtedly would also be made if they met with the approval of the two administering agencies.

St. Matthew Island has no resident population and is withdrawn as a wildlife refuge under the management of the U. S. Fish and Wildlife, Bureau of Sport Fisheries and Wildlife.

Nearly twenty years ago, petitions were filed by Savoonga and Gambell requesting establishment of Native reserves which would divide the island between them. Currently they are jointly protesting any disposal of land in the region to other than Native ownership.

region, composed
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, it is not open
to individuals.
e surveyed, and
avoonga; and
villages
pproval of the

on and is
f the U. S. Fish

ed by Savoonga
es which would
ointly protesting
ve ownership.

FIGURE V-24

CURRENT LAND STATUS, BERING SEA REGION

Total Area		**1,246,000 acres**
Withdrawals		**1,246,000 acres**
St. Lawrence Reindeer Station	1,205,000 acres	
Bering Sea N.W.R.	41,000 acres	
State Selections - none		0
Other Patented or Claimed Lands		
Patented - none		
Claimed/Entered	100 acres	
Mineral leasing - none		
Mineral locations		
2 areas - possible locations		
Petitions under Act of May 1, 1936:		
Within region: Savoonga, Gambell		
Native Protests:		
F-387, Savoonga, Northeast Cape, and Gamble Villages, 1,261,200 acres		
Public Domain - none		0

Source: U. S. Department of Interior, Bureau of Land Management, Division of Lands and Minerals, Anchorage, Alaska.

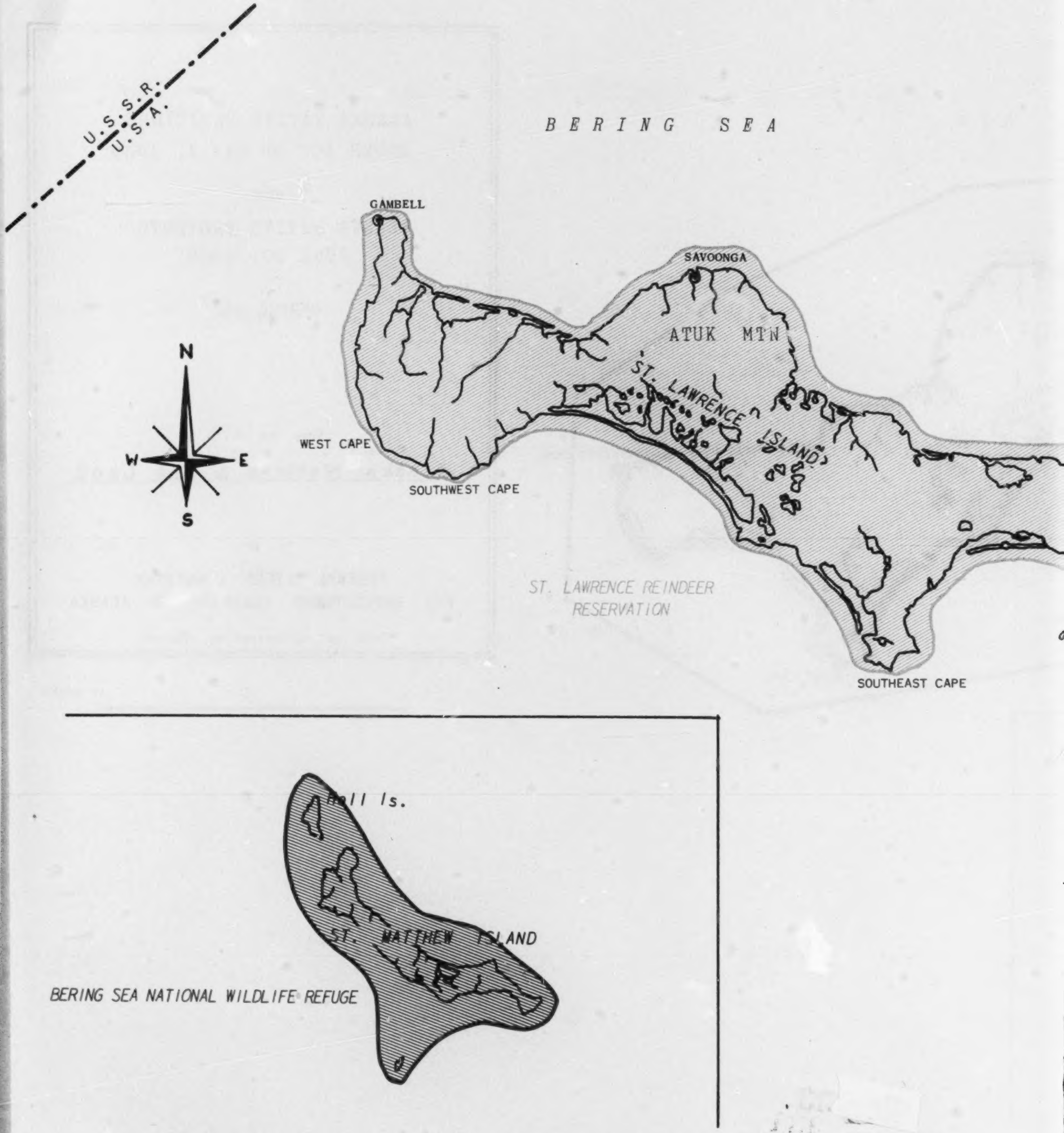
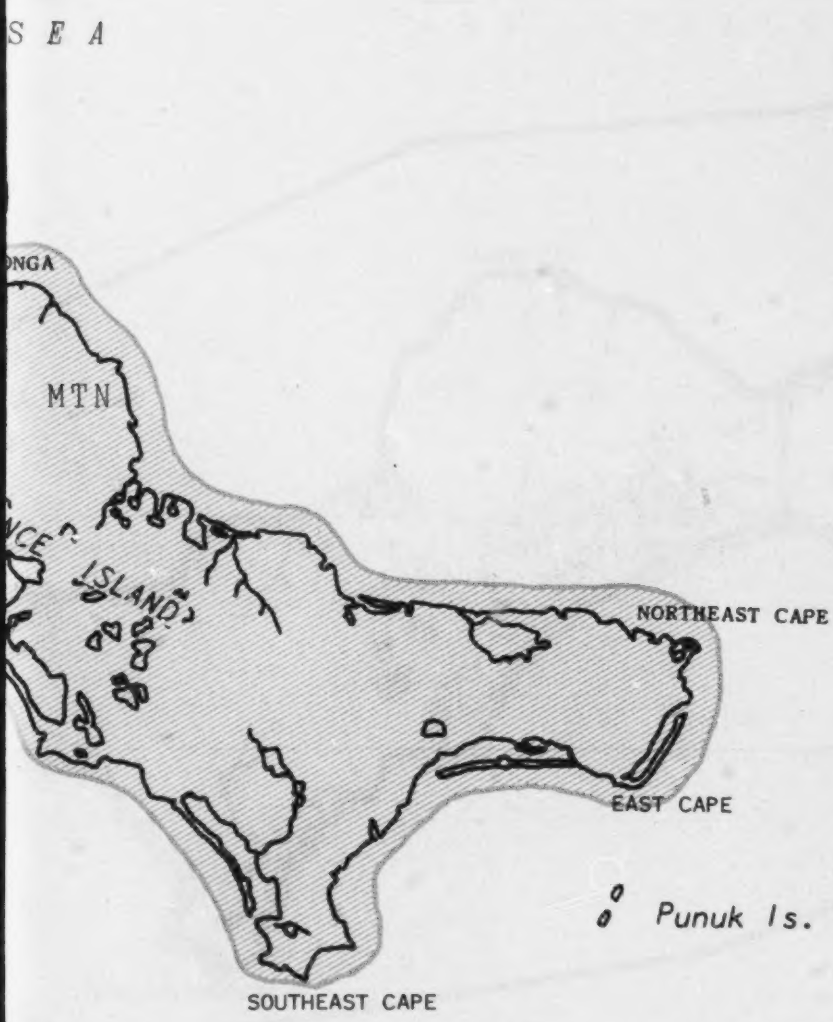

U.S.S.R.
U.S.A.
BERING SEA
GAMBELL
SAVOONGA
ATUK MTN
ST. LAWRENCE ISLAND
N
W
E
S
WEST CAPE
SOUTHWEST CAPE
SOUTHEAST CAPE
ST. LAWRENCE REINDEER RESERVATION
Hall Is.
ST. MATTHEW ISLAND
BERING SEA NATIONAL WILDLIFE REFUGE

FIGURE V – 25


S E A
NGA
MTN
NCE ISLAND
NORTHEAST CAPE
EAST CAPE
Punuk Is.
SOUTHEAST CAPE

CURRENT LAND STATUS
(June, 1968)
BERING SEA REGION

▨ Bureau of Indian Affairs
▨ U. S. Fish and Wildlife Service

Compiled for:

Alaska Natives & The Land

by the

FEDERAL FIELD COMMITTEE
FOR DEVELOPMENT PLANNING IN ALASKA

From all authoritative sources

0 25 50 MILES

FIGURE V - 25

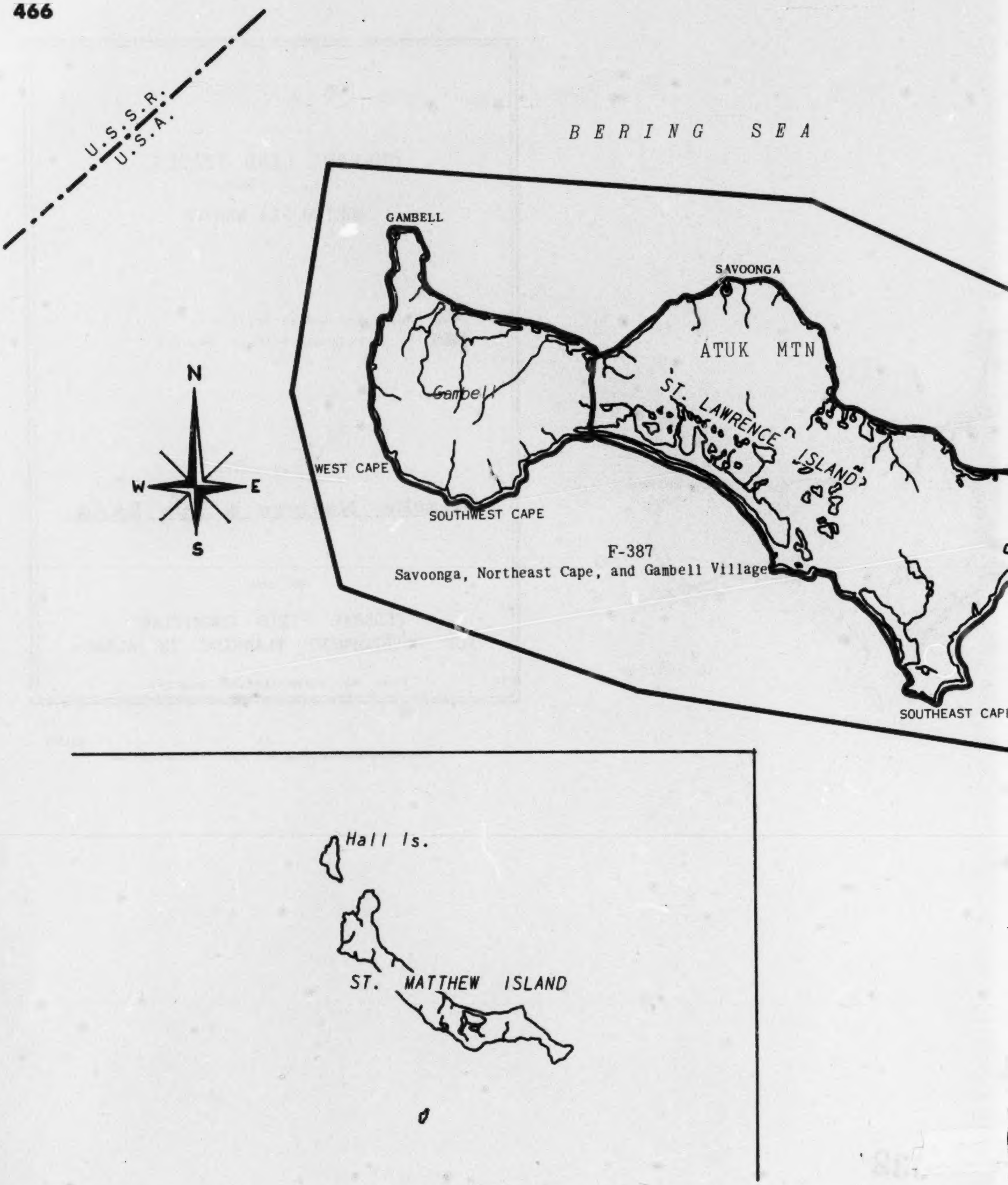
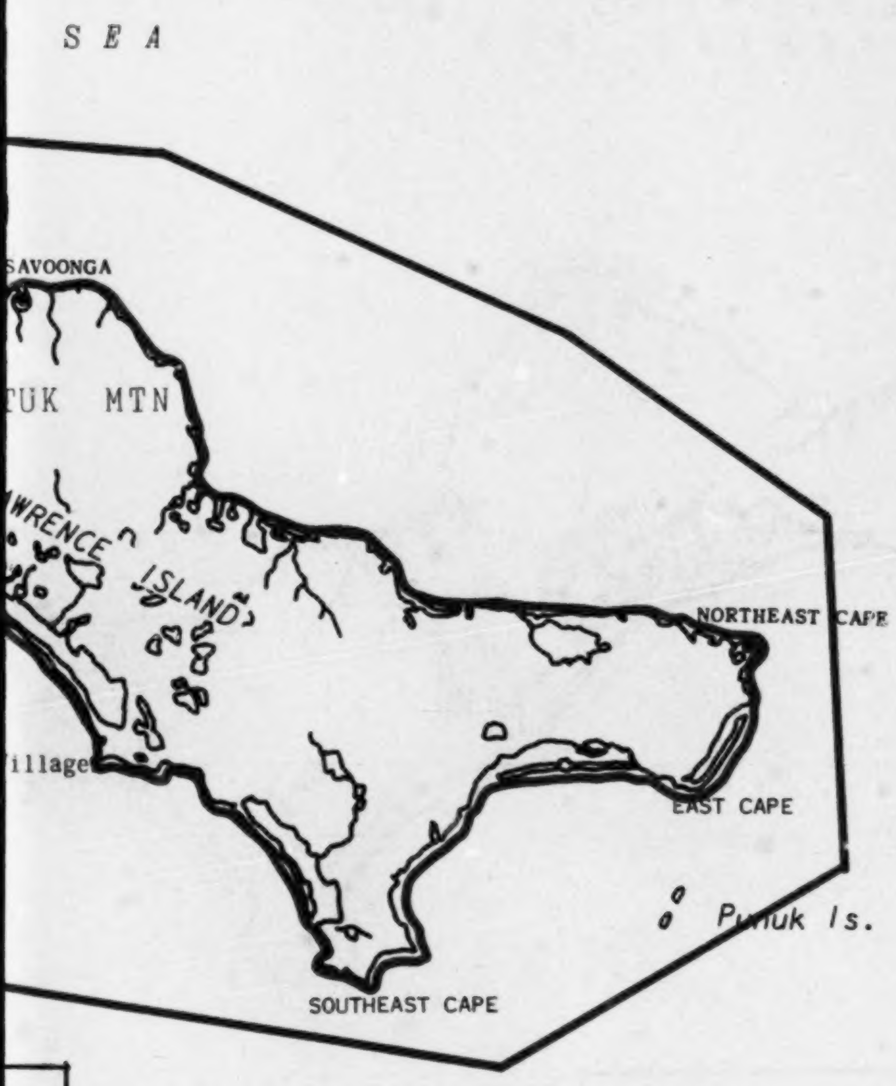

U.S.S.R.
U.S.A.
BERING SEA
GAMBELL
SAVOONGA
ATUK MTN
Gambell
ST. LAWRENCE ISLAND
WEST CAPE
SOUTHWEST CAPE
SOUTHEAST CAP
N
W
E
S
F-387
Savoonga, Northeast Cape, and Gambell Village
Hall Is.
ST. MATTHEW ISLAND

FIGURE V - 26


S E A
SAVOONGA
TUK MTN
WRENCE ISLAND
NORTHEAST CAPE
illage
EAST CAPE
Punuk Is.
SOUTHEAST CAPE

ALASKA NATIVE PETITIONS
UNDER ACT OF MAY 1, 1936

and

ALASKA NATIVE PROTESTS
JUNE 30, 1968

BERING SEA

Compiled for:

Alaska Natives & The Land

by the

FEDERAL FIELD COMMITTEE
FOR DEVELOPMENT PLANNING IN ALASKA

From all authoritative sources

0 25 50 MILES

FIGURE V - 26

Southwest Coastal Lowland Region

More than 10,000 Alaska Natives live in 41 villages in this region, which composes 8 percent of the area of the state. They compose 29 percent of rural Native people in Alaska and 20 percent of the total Native population. More than 1,500 of the Natives live in Bethel. The next largest Native village is Hooper Bay, with more than 500 inhabitants. Other villages may have as few as 40, although most have over 100 residents; and many villages have populations of 300 or 400. Of the 41 villages, 10 have been surveyed and deeds issued in 2 of them: Aniak and Bethel. Three allotments totaling 77 acres have been issued to individual Natives in the region.

Only Akiak, with 1,373 acres, and Mountain Village, with 1,280 acres, have lands withdrawn for their use under the management of the Bureau of Indian Affairs. Mekoryuk, on Nunivak Island, as well as Newtok, on Hazen Bay, and Nightmute and Chefornak, on Clarence Rhode National Wildlife Refuge, are on lands withdrawn for the protection of wildlife under the management of the U. S. Fish and Wildlife Service, Bureau of Sport Fisheries and Wildlife. The Clarence Rhode Refuge provides for hunting, fishing, and trapping in accordance with applicable state law. The withdrawal orders for Hazen Bay and Nunivak Island wildlife refuges do not prohibit subsistence use, but their purpose requires protection of birds within the reserves.

Village use of the lands is complicated by the regulatory authority of the agencies administering the withdrawals. Nunivak Island, for example, is at once a refuge for migratory birds, a refuge for musk ox, and also a reindeer station, with management of these often-conflicting uses shared by the Bureau of Sport Fisheries and Wildlife and the Bureau of Indian Affairs.

The state's selection of land, though small thus far, recognizes in its location the position of Bethel as the population, governmental, service, and distribution center for the entire region. More than 90 percent of the 31 million acres of the region remains in the public domain.

Evidence of the continuing claim to the area are the 12 petitions filed by 18 villages in the region as much as twenty years ago in which they delineated the areas which each village claimed at that time. Many of the same villages have joined in recent protest of disposal of more than 33 million acres embracing this and extending into other regions.

l villages in this
state. They compose
percent of the total
live in Bethel. The
e than 500 inhabi-
ugh most have over
f 300 or 400. Of the
in 2 of them: Aniak
e been issued to

n Village, with
der the management
vak Island, as well
k, on Clarence Rhode
r the protection of
Wildlife Service,
ce Rhode Refuge pro-
nce with applicable
Nunivak Island
ut their purpose

by the regulatory
awals. Nunivak
tory birds, a refuge
agement of these often-
eries and Wildlife

all thus far,
as the population,
the entire region.
e region remains in

area are the 12
ch as twenty years
village claimed at
in recent protest
g this and extending

FIGURE V - 27

CURRENT LAND STATUS, SOUTHWEST COASTAL LOWLAND REGION

Total Area		31,100,000 acres
Withdrawals		2,996,580 acres
C. Rhodes N.W.R.	1,870,000 acres	
Nunivak N.W.R.	1,109,500 acres	
Hazen Bay N.W.R.	7,000 acres	
Cape Romanzof Military	5,000 acres	
Cape Newenham Military	2,500 acres	
Akiak N.R.	1,300 acres	
Mountain Village N.R.	1,280 acres	
State Selections		35,000 acres
Selected Only	35,000 acres	
Other Patented or Claimed Lands		
Patented	3,000 acres	
Claimed/Entered	28,800 acres	

Mineral leasing - none
Mineral locations

22 areas - gold placer
5 areas - known production
13 areas - probable locations

Petitions under Act of May 1, 1936:

Within region:	Chaneliak-Kotlik, Nunivak, Tununak, Kwillingok, Pimute[a], Mountain Village, Kalskag, Quinhagok, Akiak, Napakiak et al.[b], Akiachak (not platted), Goodnews Bay (not platted).
Partially within region:	Unalakleet, Kwethluk

Native Protests:

Within region

AA-373 (F-108) Bethel area villages, 33,685,000 acres

Overlap from adjacent regions

AA-872, Kodiak et al., see Bristol Bay region
F -427, Grayling et al., see Bering Sea region
F -504, Holy Cross Natives, 4,469,800 acres, see also Yukon-Koyukuk region

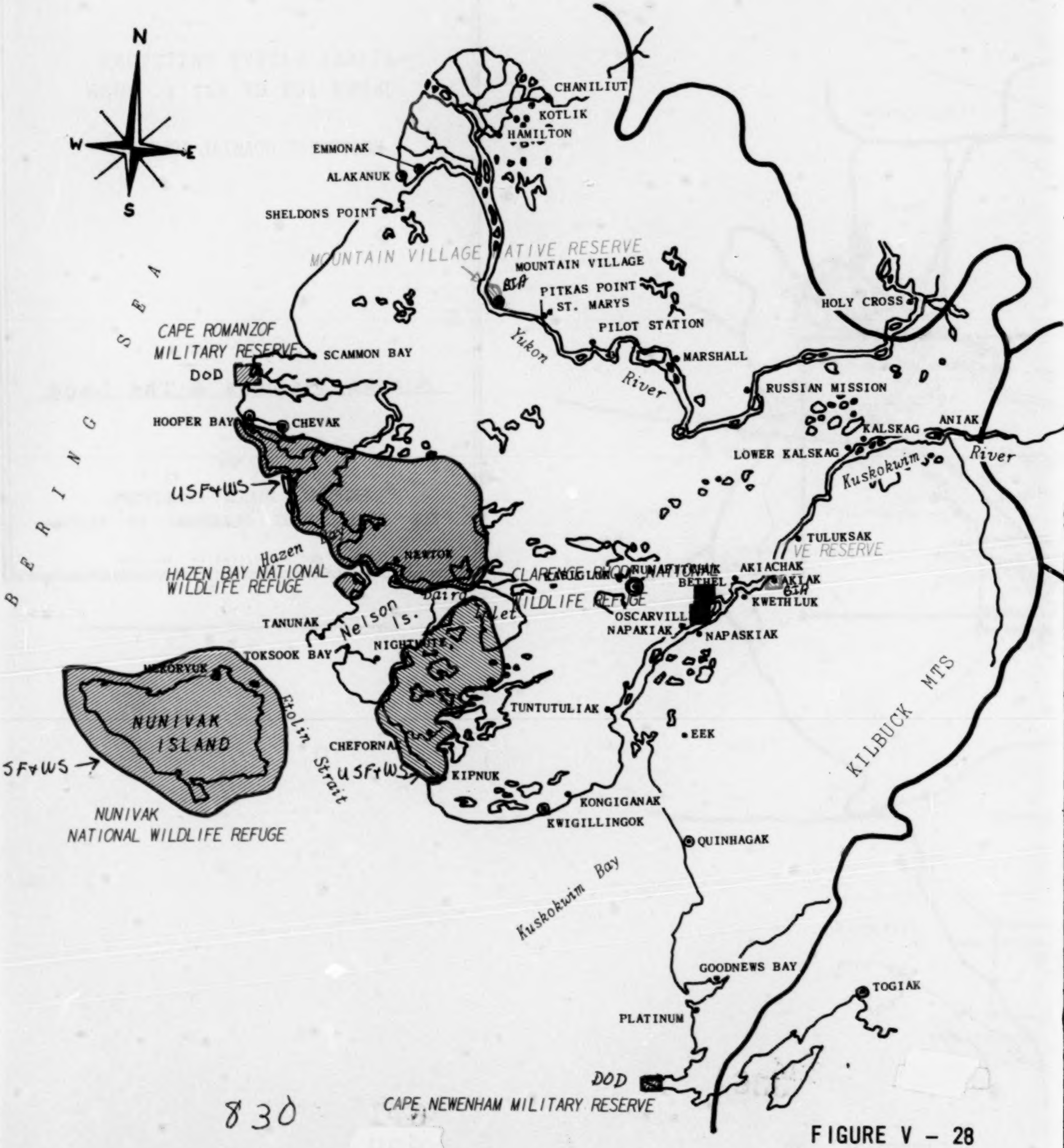
Public Domain - Estimate 28,000,000 acres

---

[a] Approximate location.

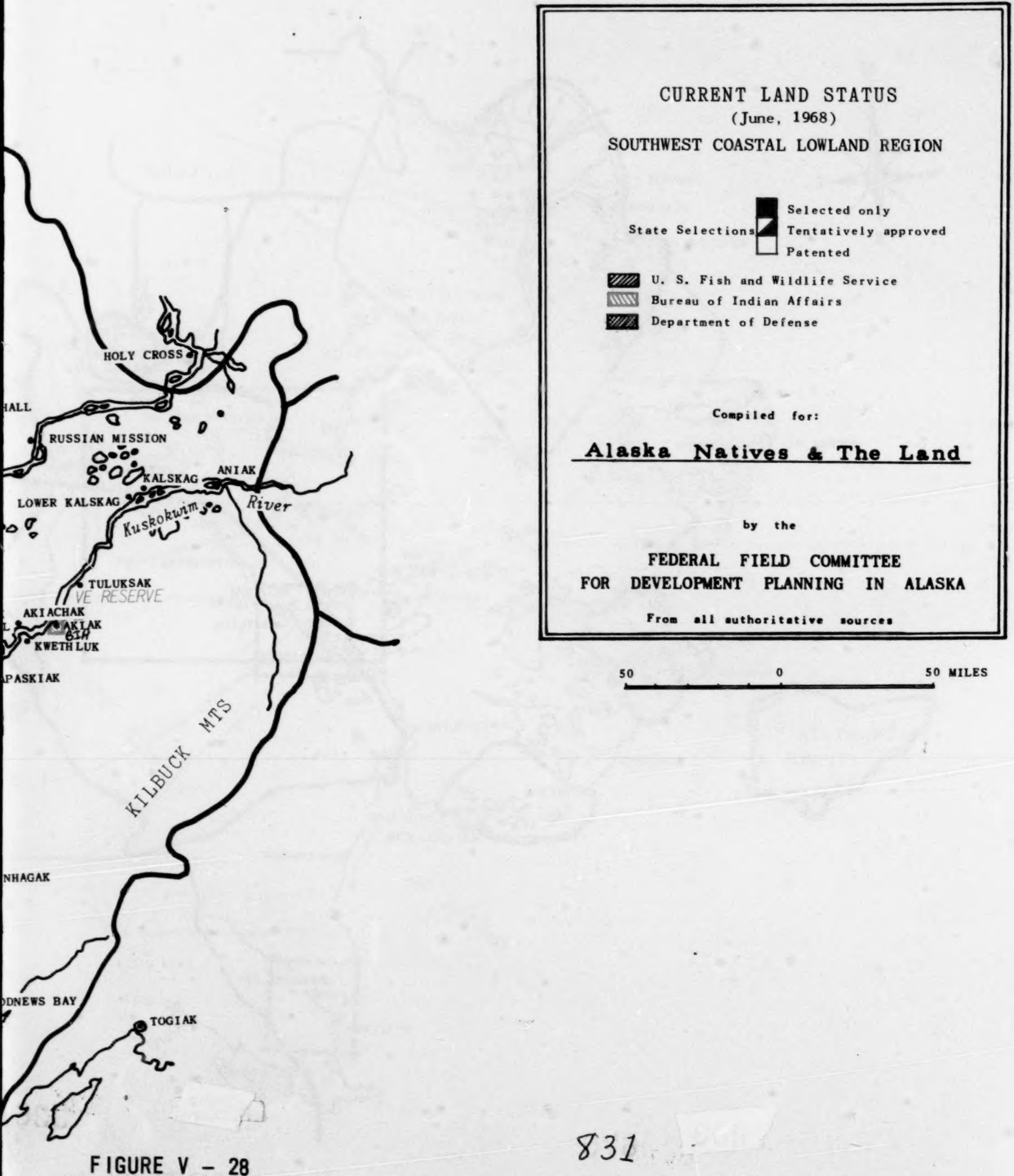
[b] Also includes Napakiak, Tuntuliak, Nunapitchuk, Kasiglok, Eek, and Quinhagok.

Source: U. S. Department of Interior, Bureau of Land Management, Division of Lands and Minerals, Anchorage, Alaska.


N
W
E
S
BERING SEA
CHANILIUT
KOTLIK
HAMILTON
EMMONAK
ALAKANUK
SHELDONS POINT
MOUNTAIN VILLAGE NATIVE RESERVE
MOUNTAIN VILLAGE
BIA
PITKAS POINT
ST. MARYS
PILOT STATION
MARSHALL
Yukon
River
HOLY CROSS
RUSSIAN MISSION
CAPE ROMANZOF
MILITARY RESERVE
SCAMMON BAY
DOD
HOOPER BAY
CHEVAK
USF+WS
KALSKAG
ANIAK
LOWER KALSKAG
Kuskokwim
River
TULUKSAK
VE RESERVE
Hazen
Bay
HAZEN BAY NATIONAL
WILDLIFE REFUGE
NEWTOK
CLARENCE RHODE NATIONAL
WILDLIFE REFUGE
KASIGLUK
NUNAPITCHUK
BETHEL
AKIACHAK
AKIAK
BIA
KWETHLUK
OSCARVILLE
NAPAKIAK
NAPASKIAK
Baird
Inlet
Nelson Is.
TANUNAK
TOKSOOK BAY
NIGHTMUTE
MEKORYUK
NUNIVAK
ISLAND
USF+WS
NUNIVAK
NATIONAL WILDLIFE REFUGE
Etolin
Strait
TUNTUTULIAK
EEK
CHEFORNAK
USF+WS
KIPNUK
KONGIGANAK
KWIGILLINGOK
QUINHAGAK
KILBUCK MTS
Kuskokwim Bay
GOODNEWS BAY
TOGIAK
PLATINUM
DOD
CAPE NEWENHAM MILITARY RESERVE

830

FIGURE V - 28



CURRENT LAND STATUS
(June, 1968)
SOUTHWEST COASTAL LOWLAND REGION

State Selections
- ■ Selected only
- ◪ Tentatively approved
- □ Patented

- ▨ U. S. Fish and Wildlife Service
- ▨ Bureau of Indian Affairs
- ▨ Department of Defense

Compiled for:

Alaska Natives & The Land

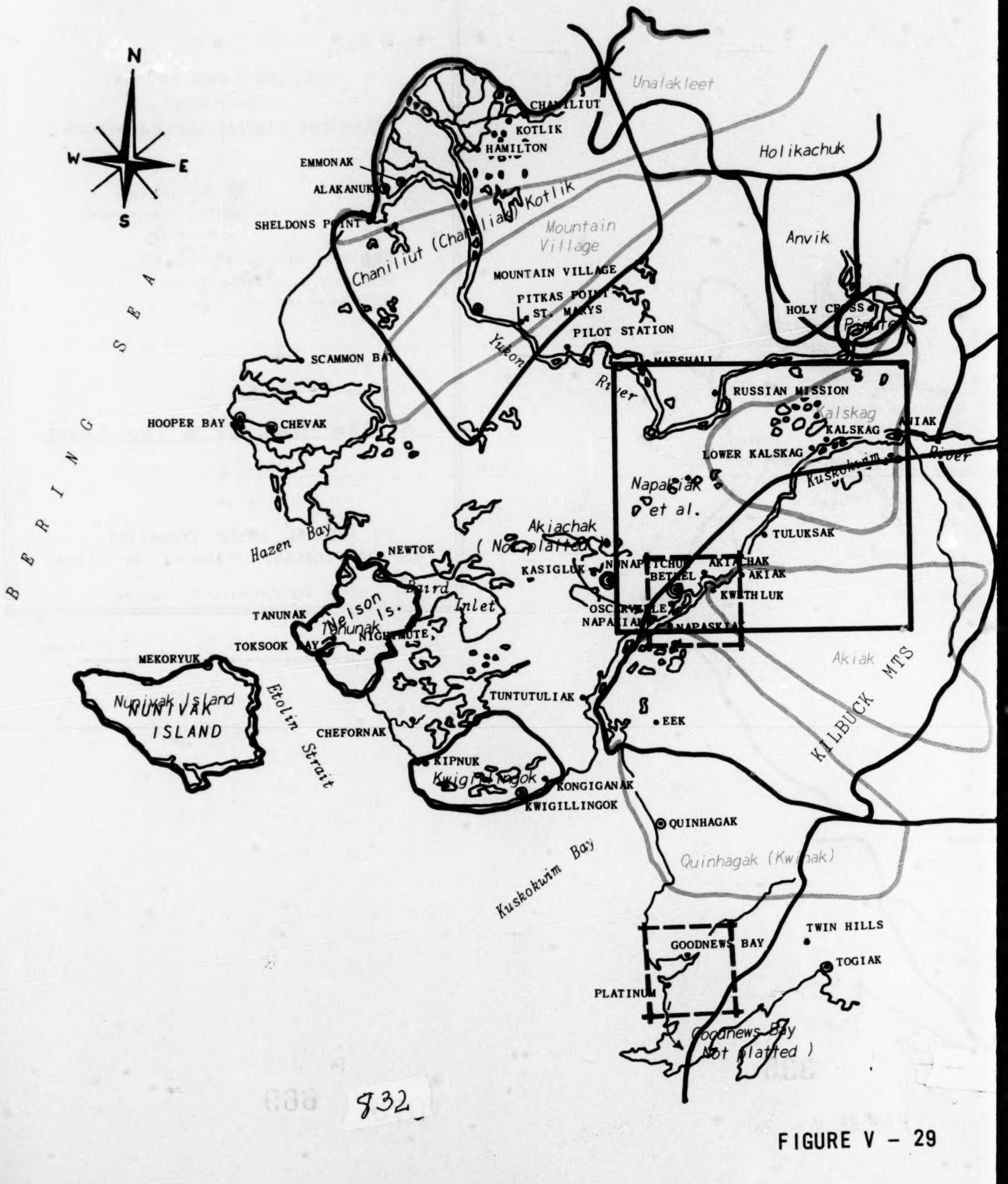
by the

FEDERAL FIELD COMMITTEE
FOR DEVELOPMENT PLANNING IN ALASKA

From all authoritative sources

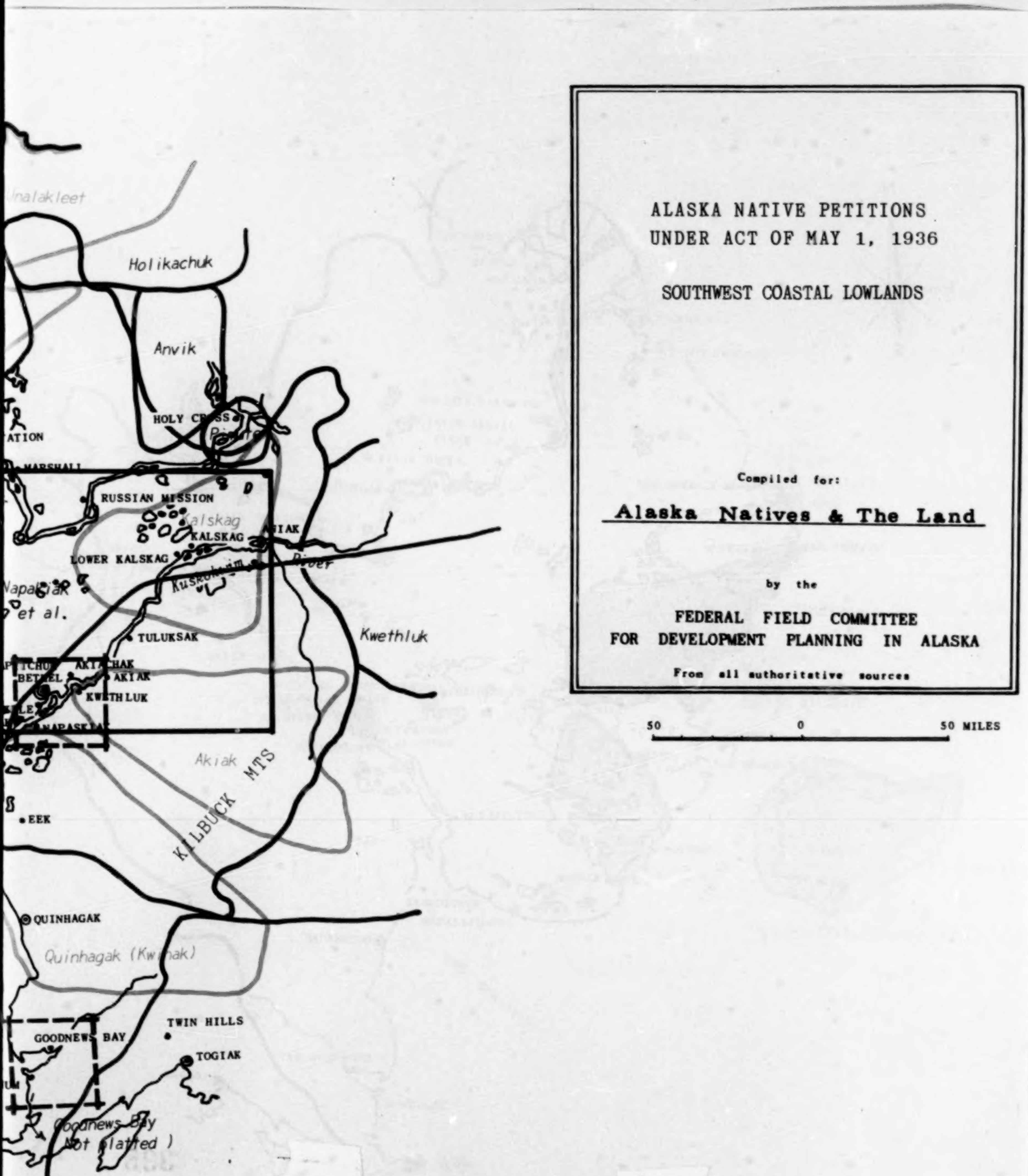
50
0
50 MILES
HOLY CROSS
HALL
RUSSIAN MISSION
KALSKAG
ANIAK
LOWER KALSKAG
Kuskokwim
River
TULUKSAK
VE RESERVE
AKIACHAK
AKIAK
BIA
KWETHLUK
PASKIAK
KILBUCK MTS
NHAGAK
DNEWS BAY
TOGIAK

FIGURE V - 28


N
W
E
S
BERING SEA
Unalakleet
CHANILIUT
KOTLIK
HAMILTON
EMMONAK
ALAKANUK
SHELDONS POINT
Chaniliut (Chaniliak) Kotlik
Mountain Village
Holikachuk
Anvik
MOUNTAIN VILLAGE
PITKAS POINT
ST. MARYS
PILOT STATION
Yukon River
HOLY CROSS
Pimute
SCAMMON BAY
MARSHALL
RUSSIAN MISSION
Kalskag
KALSKAG
ANIAK
HOOPER BAY
CHEVAK
LOWER KALSKAG
Kuskokwim River
Napakiak et al.
TULUKSAK
Hazen Bay
NEWTOK
Akiachak (Not platted)
KASIGLUK
NUNAPITCHUK
AKIACHAK
AKIAK
BETHEL
KWETHLUK
Baird Inlet
Nelson Is.
Tanunak
TANUNAK
NIGHTMUTE
OSCARVILLE
NAPAKIAK
NAPASKIAK
TOKSOOK BAY
MEKORYUK
Nunivak Island
NUNIVAK ISLAND
Etolin Strait
Akiak
KILBUCK MTS
TUNTUTULIAK
EEK
CHEFORNAK
KIPNUK
Kwigillingok
KONGIGANAK
KWIGILLINGOK
QUINHAGAK
Quinhagak (Kwinhak)
Kuskokwim Bay
TWIN HILLS
GOODNEWS BAY
TOGIAK
PLATINUM
(Goodnews Bay Not platted)

932

FIGURE V - 29


Unalakleet
Holikachuk
Anvik
HOLY CROSS
Pimute
ATION
MARSHALL
RUSSIAN MISSION
Kalskag
KALSKAG
ANIAK
LOWER KALSKAG
Kuskokwim River
Napakiak et al.
TULUKSAK
Kwethluk
AKIACHAK
AKIAK
BETHEL
KWETHLUK
NAPASKIAK
Akiak
KILBUCK MTS
EEK
QUINHAGAK
Quinhagak (Kwinhak)
TWIN HILLS
GOODNEWS BAY
TOGIAK
Goodnews Bay (Not platted)
50
0
50 MILES

ALASKA NATIVE PETITIONS
UNDER ACT OF MAY 1, 1936

SOUTHWEST COASTAL LOWLANDS

Compiled for:

Alaska Natives & The Land

by the

FEDERAL FIELD COMMITTEE
FOR DEVELOPMENT PLANNING IN ALASKA

From all authoritative sources

FIGURE V - 29

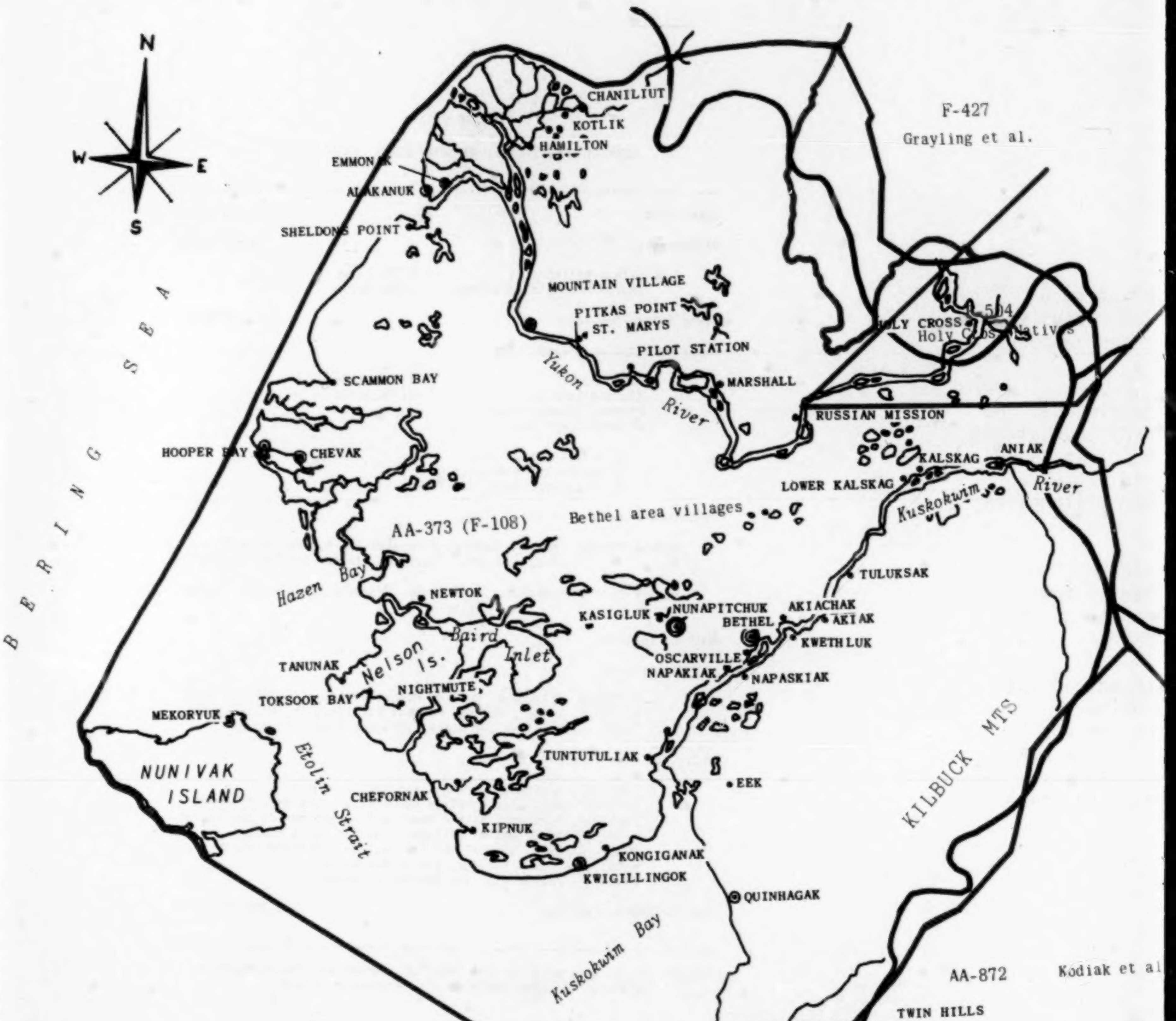
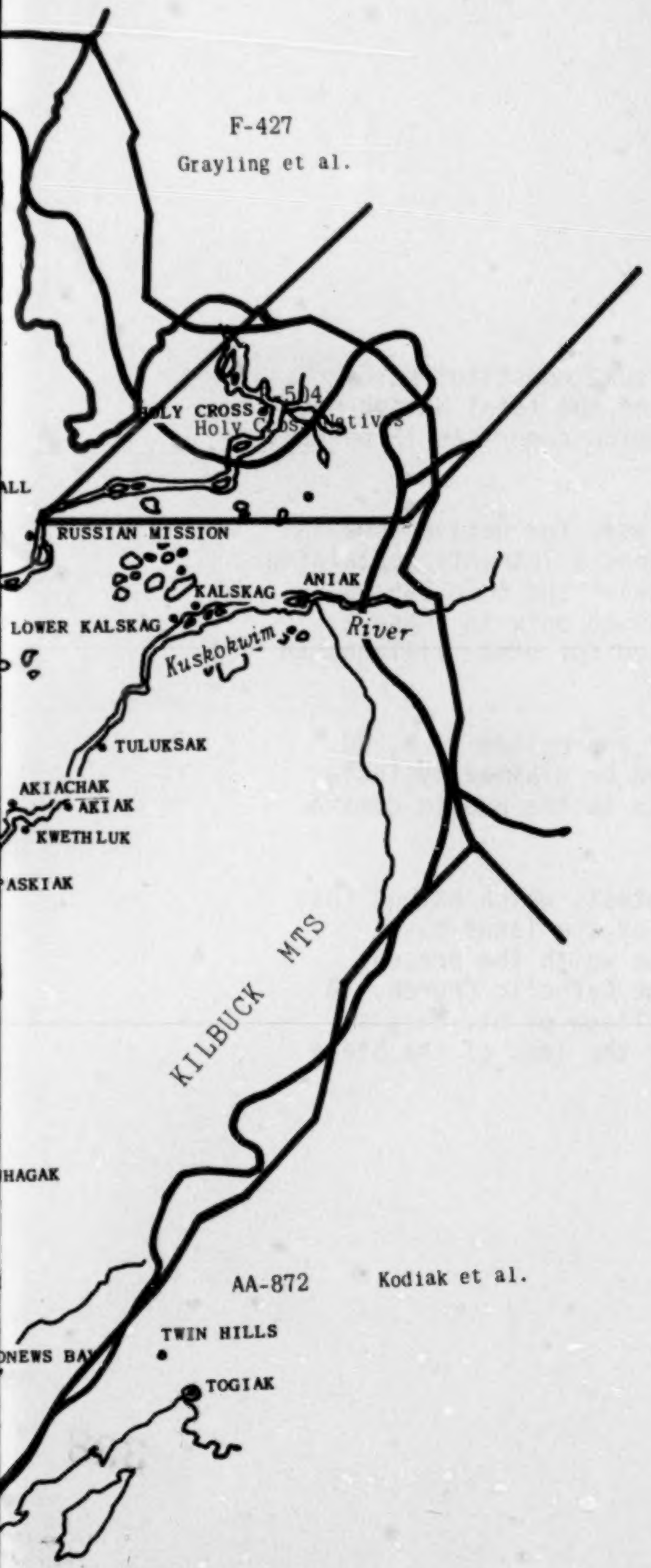

N
W
E
S
BERING SEA
CHANILIUT
KOTLIK
HAMILTON
EMMONAK
ALAKANUK
SHELDONS POINT
F-427
Grayling et al.
MOUNTAIN VILLAGE
PITKAS POINT
ST. MARYS
PILOT STATION
HOLY CROSS
504
Holy Cross Natives
Yukon River
MARSHALL
SCAMMON BAY
RUSSIAN MISSION
HOOPER BAY
CHEVAK
KALSKAG
ANIAK
LOWER KALSKAG
Kuskokwim River
Bethel area villages
AA-373 (F-108)
Hazen Bay
TULUKSAK
NEWTOK
KASIGLUK
NUNAPITCHUK
AKIACHAK
BETHEL
AKIAK
KWETHLUK
Baird Inlet
Nelson Is.
TANUNAK
OSCARVILLE
NAPAKIAK
NAPASKIAK
NIGHTMUTE
TOKSOOK BAY
MEKORYUK
NUNIVAK ISLAND
Etolin Strait
TUNTUTULIAK
EEK
KILBUCK MTS
CHEFORNAK
KIPNUK
KONGIGANAK
KWIGILLINGOK
QUINHAGAK
Kuskokwim Bay
AA-872
Kodiak et al
TWIN HILLS
GOODNEWS BAY
TOGIAK
PLATINUM

FIGURE V - 30


F-427
Grayling et al.
HOLY CROSS
504
Holy Cross Natives
ALL
RUSSIAN MISSION
KALSKAG
ANIAK
LOWER KALSKAG
Kuskokwim
River
TULUKSAK
AKIACHAK
AKIAK
KWETHLUK
ASKIAK
KILBUCK MTS
HAGAK
AA-872
Kodiak et al.
TWIN HILLS
ONEWS BA
TOGIAK

ALASKA NATIVE PROTESTS
JUNE 30, 1968

SOUTHWEST COASTAL LOWLANDS

Compiled for:

Alaska Natives & The Land

by the

FEDERAL FIELD COMMITTEE
FOR DEVELOPMENT PLANNING IN ALASKA

From all authoritative sources

50 0 50 MILES

835

FIGURE V - 30

Koyukuk-Lower Yukon Region

Slightly more than 2,400 Alaska Natives, constituting 6 percent of rural Alaska Natives and 5 percent of the total Native population, live in this 46.5 million-acre region which comprises 12 percent of the area of the state.

There are no reserves or withdrawn lands for Native use, and Native ownership is limited to 11 restricted-deed allotments containing 1,032 acres and 27 townsite lots owned in Shageluk and 6 in Tanana. Of the 3 villages surveyed, deeds have been issued only in these 2 villages. Eight additional surveys are proposed for other villages in the region.

Except for 2 military withdrawals of approximately 5,500 acres and another 6,000 acres in lands patented or claimed by individuals, all of the lands in this region remain in the public domain. There are no state selections in the region.

Tanana and Holy Cross have filed protests which extend into other regions, and other protests to disposal of the lands have blanketed the region. The title to the land on which the present village of Holy Cross is located belongs to the Catholic Church. A similarly owned site was transferred to the village of St. Mary's when that village incorporated as a city under the laws of the State of Alaska.

constituting 6
ne total Native popu-
comprises 12 percent

for Native use, and
allotments containing
and 6 in Tanana.
only in these 2
or other villages in

roximately 5,500
claimed by indi-
the public domain.

s which extend into
ne lands have
ich the present
tholic Church. A
e of St. Mary's
laws of the State

FIGURE V-31

CURRENT LAND STATUS, KOYUKUK--LOWER YUKON REGION

Total Area		46,500,000 acres
Withdrawals		5,500 acres
Galena Military	2,500 acres	
Indian Mountain, Military	3,000 acres	
State Selections--none		0 acres
Other Patented or Claimed Land		
Patented	3,000 acres	
Claimed/Entered	3,000 acres	
Mineral leasing--none		
Mineral locations		

62 areas--placer gold
10 areas--known production
56 areas--probable locations

Petitions under Act of May 1, 1936:

Within region: Kaltag, Galena, Allakaket and Alatna, Nulato, Shageluk, Anvik (and one platted but not identified)

Partially within region: Holikachuk, Unalakleet, Buckland, Noatak, Selawik

Native Protests:

Within region

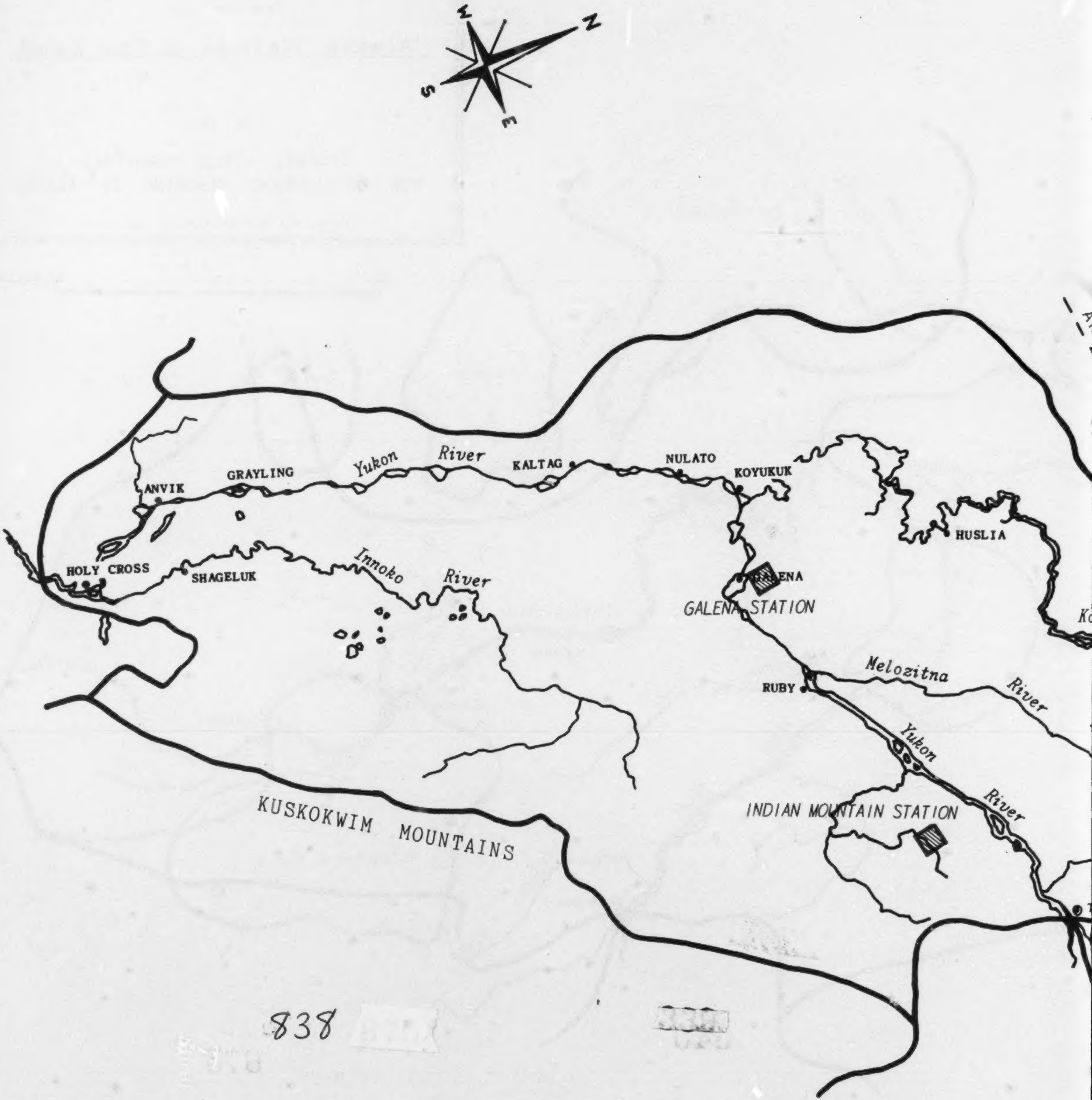
F-035268, Allakaket, Huslia, Hughes Villages, 9,080,100 acres
F-035271, Kaltag, Nulato, Koyukuk Villages, 15,740,300 acres
F-427 , Grayling and Anvik Villages, 8,551,200 acres

Overlap from adjacent regions

F-035252, Anaktuvuk Village, see Arctic region
F-035257, North Slope Native Association, see Arctic region
F-035294, Northwest Native Association, see Bering Sea region
F-108 (AA-373), Bethel Villages, see Y-K Delta region
F-392 (AA-681), Nikolai and Telida, see Kuskokwim region
F-456 , Tanana Village, see Tanana region
F-504 , Holy Cross, see Kuskokwim region

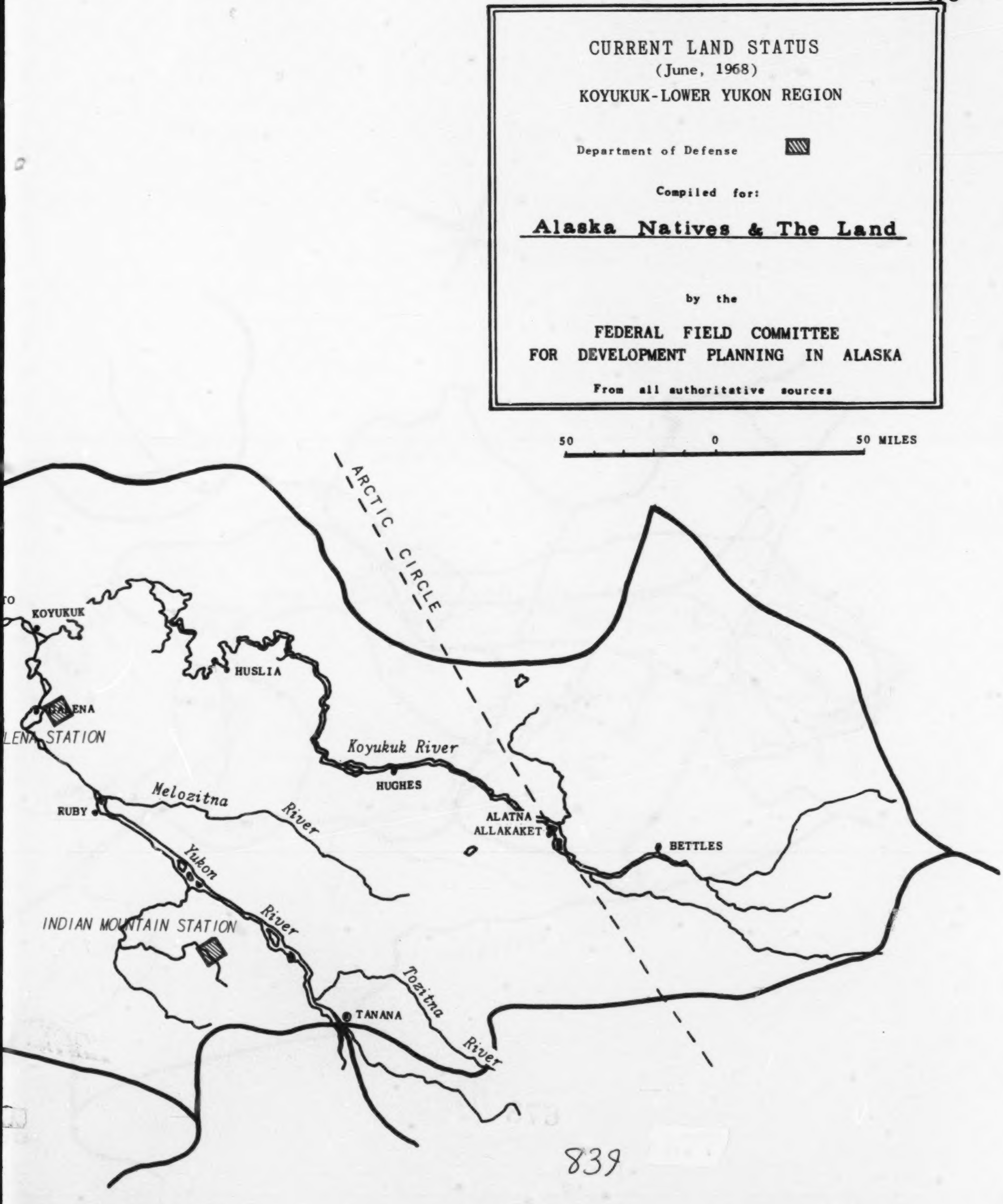
Public Domain--Estimate	46,480,000 acres

Source: U. S. Department of the Interior, Bureau of Land Management, Division of Lands and Minerals, Anchorage, Alaska.


W
N
S
E
ANVIK
GRAYLING
Yukon River
KALTAG
NULATO
KOYUKUK
HUSLIA
HOLY CROSS
SHAGELUK
Innoko River
GALENA
GALENA STATION
RUBY
Melozitna River
Yukon River
INDIAN MOUNTAIN STATION
KUSKOKWIM MOUNTAINS

838

FIGURE V - 32



CURRENT LAND STATUS
(June, 1968)
KOYUKUK-LOWER YUKON REGION

Department of Defense ▨

Compiled for:

Alaska Natives & The Land

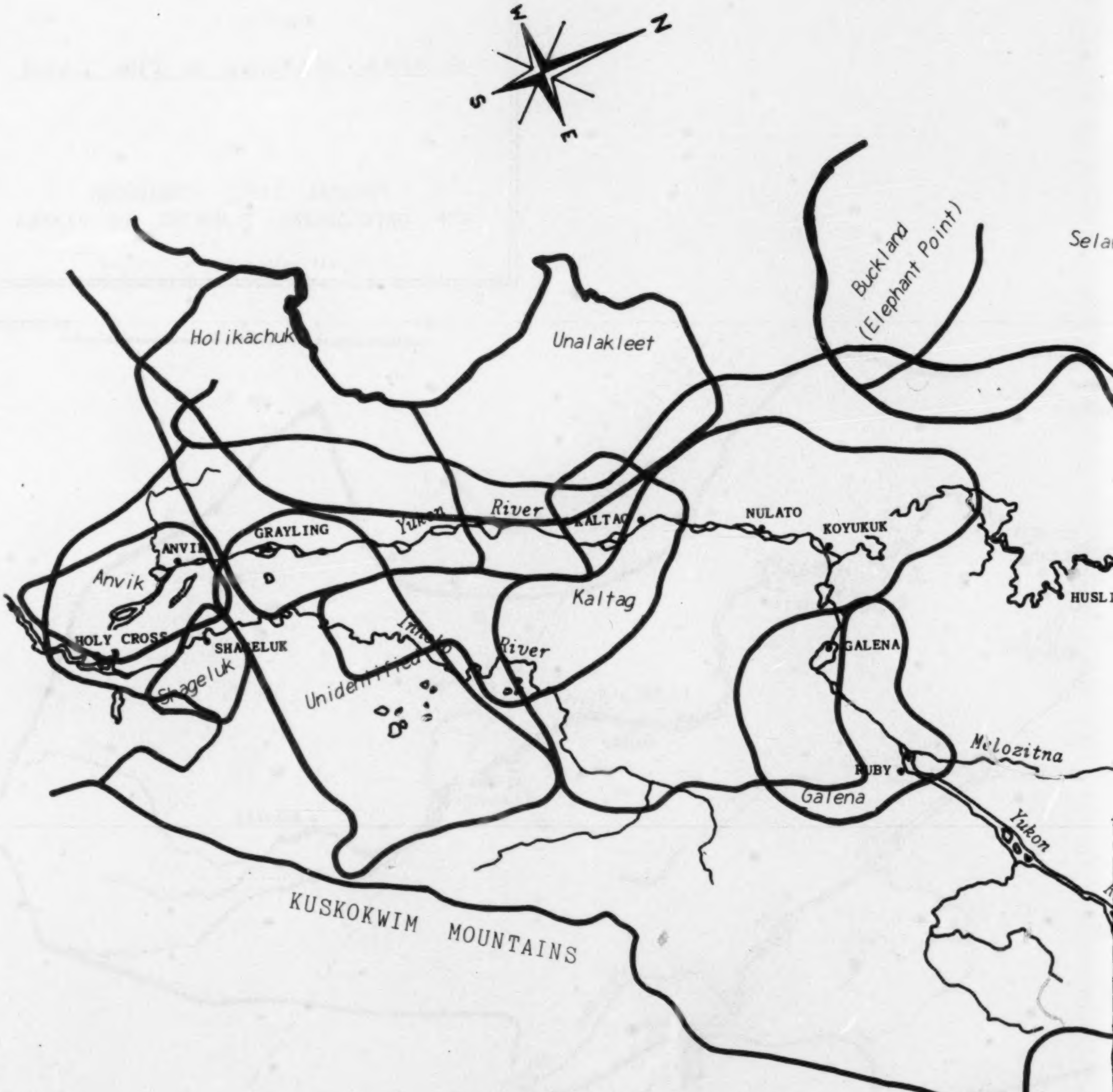
by the

FEDERAL FIELD COMMITTEE
FOR DEVELOPMENT PLANNING IN ALASKA

From all authoritative sources

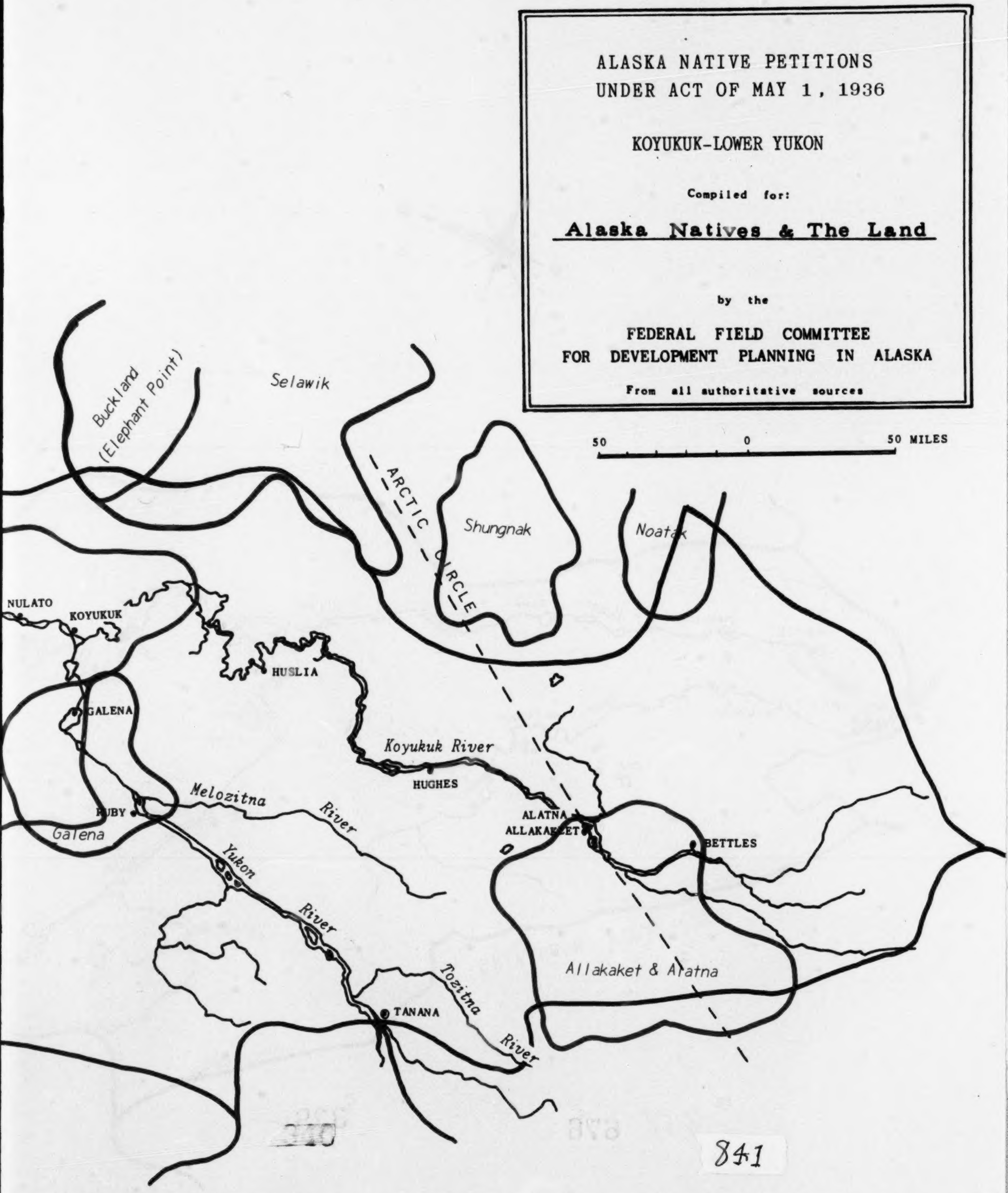
50
0
50 MILES
ARCTIC CIRCLE
TO
KOYUKUK
HUSLIA
ENA
LENA STATION
Koyukuk River
HUGHES
Melozitna River
RUBY
ALATNA
ALLAKAKET
BETTLES
Yukon River
INDIAN MOUNTAIN STATION
Tozitna River
TANANA

FIGURE V - 32


W
N
S
E
Holikachuk
Unalakleet
Buckland
(Elephant Point)
Sela
Yukon River
KALTAG
NULATO
KOYUKUK
GRAYLING
ANVIK
Anvik
D
HOLY CROSS
SHAGELUK
Shageluk
Innoko River
Unidentified
Kaltag
GALENA
HUSLI
Melozitna
RUBY
Galena
Yukon
KUSKOKWIM MOUNTAINS

840

FIGURE V – 33



ALASKA NATIVE PETITIONS
UNDER ACT OF MAY 1, 1936

KOYUKUK-LOWER YUKON

Compiled for:

Alaska Natives & The Land

by the

FEDERAL FIELD COMMITTEE
FOR DEVELOPMENT PLANNING IN ALASKA

From all authoritative sources

50
0
50 MILES
Buckland (Elephant Point)
Selawik
ARCTIC CIRCLE
Shungnak
Noatak
NULATO
KOYUKUK
HUSLIA
GALENA
Koyukuk River
HUGHES
Melozitna River
RUBY
Galena
ALATNA
ALLAKAKET
BETTLES
Yukon River
Allakaket & Alatna
Tozitna River
TANANA

FIGURE V - 33

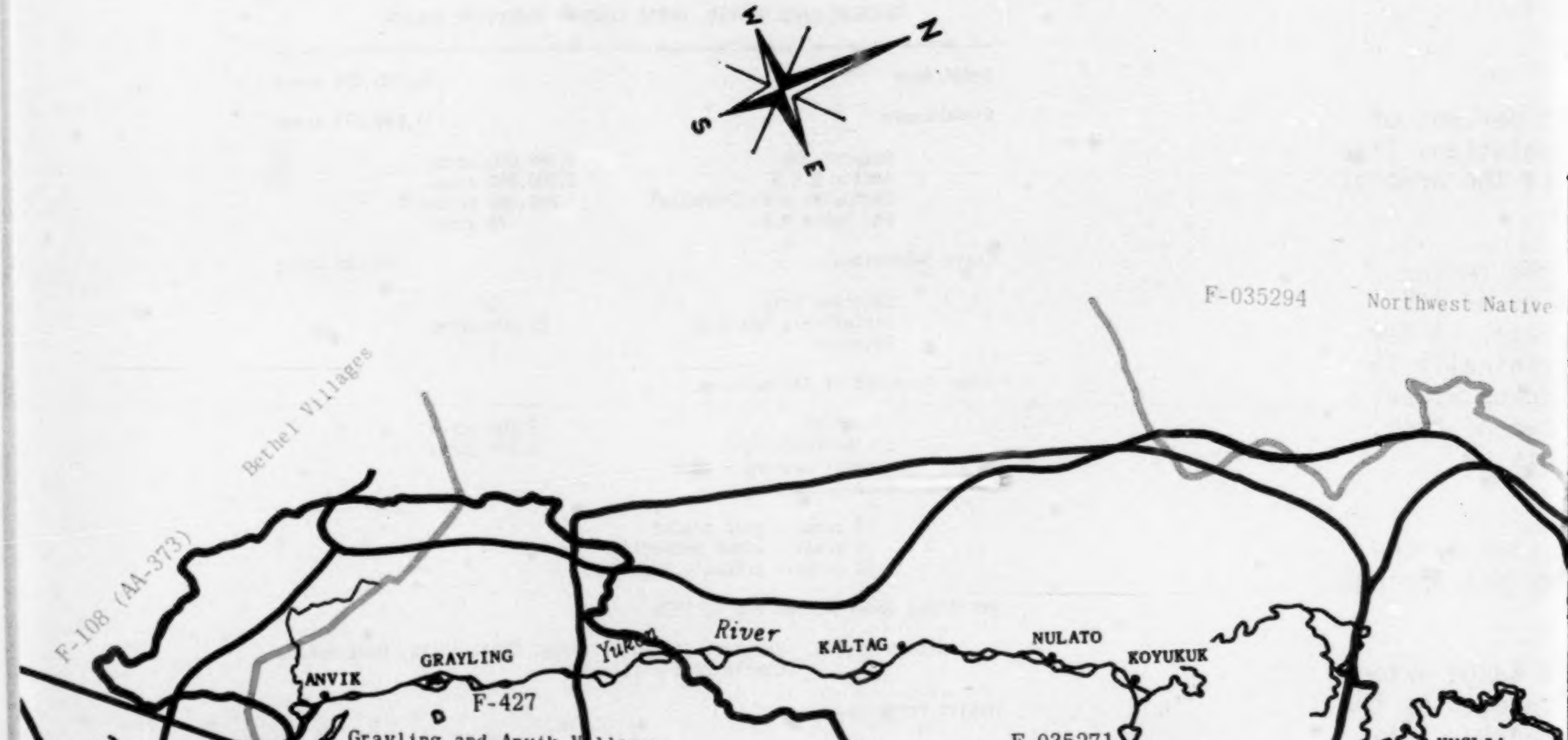
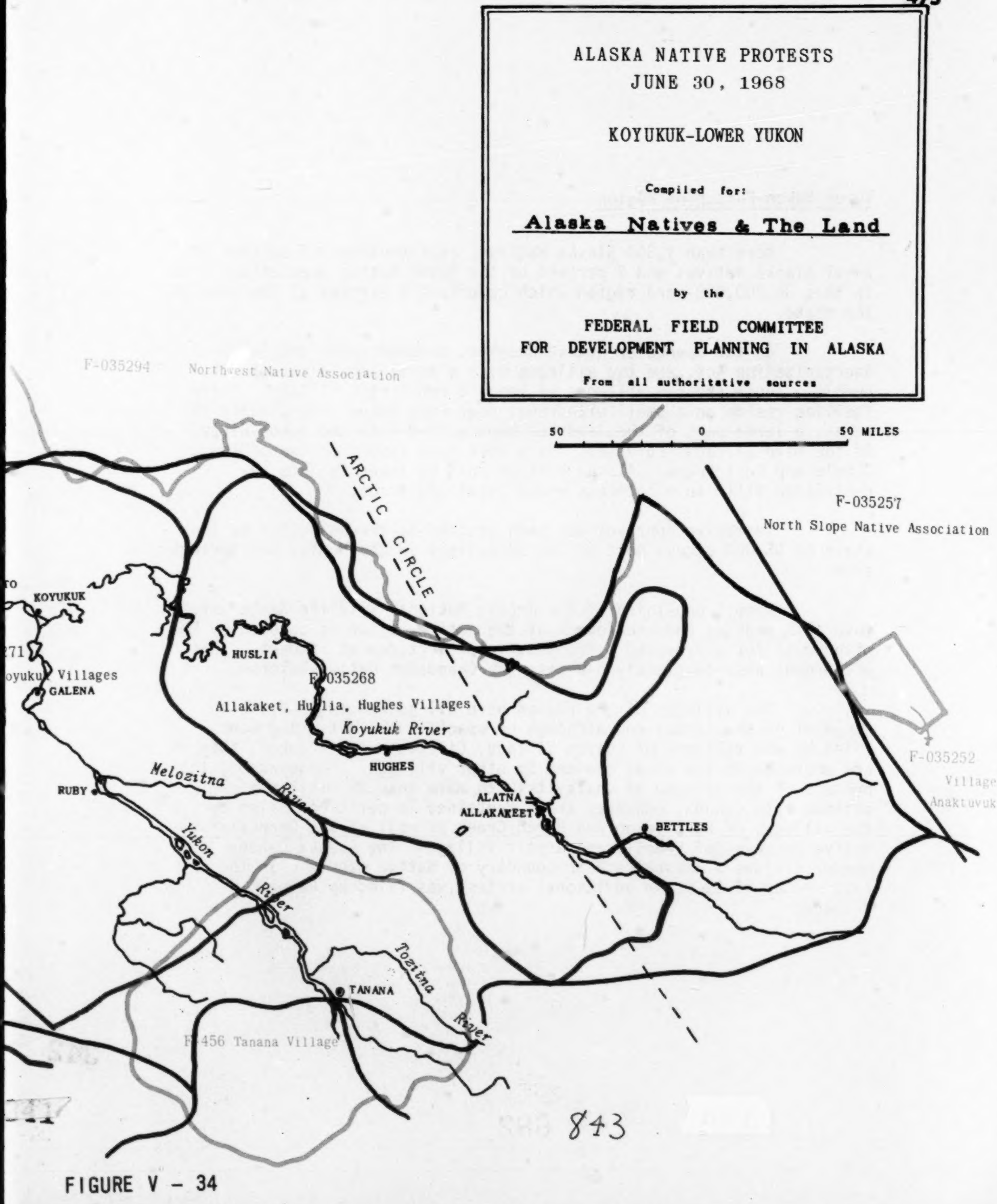

N
S
E
W
F-035294 Northwest Native
Bethel Villages
F-108 (AA-373)
ANVIK
GRAYLING
F-427
Grayling and Anvik Villages
HOLY CROSS
SHAGELUK
Yukon River
KALTAG
NULATO
KOYUKUK
F-035271
Kaltag, Nulato, Koyukuk Villages
GALENA
Innoko River
HUSLIA
Allakaket, Hu
RUBY
Melozitna River
Yukon River
F-504
Holy Cross
KUSKOKWIM MOUNTAINS
F-392 (AA-681)
Nikolai and Telida
F-456 Tanana Vil

FIGURE V - 34



ALASKA NATIVE PROTESTS
JUNE 30, 1968

KOYUKUK-LOWER YUKON

Compiled for:

Alaska Natives & The Land

by the

FEDERAL FIELD COMMITTEE
FOR DEVELOPMENT PLANNING IN ALASKA

From all authoritative sources

50 0 50 MILES
F-035294 Northwest Native Association
ARCTIC CIRCLE
F-035257
North Slope Native Association
TO
KOYUKUK
271
oyukuk Villages
GALENA
HUSLIA
F-035268
Allakaket, Huslia, Hughes Villages
Koyukuk River
HUGHES
RUBY
Melozitna
River
Yukon
River
ALATNA
ALLAKAKEET
BETTLES
F-035252
Village
Anaktuvuk
Tozitna
River
TANANA
F-456 Tanana Village

FIGURE V – 34

Upper Yukon-Porcupine Region

More than 1,300 Alaska Natives, representing 3.5 percent of rural Alaska Natives and 2 percent of the total Native population, live in this 36,700,000-acre region which comprises 9 percent of the area of the state.

On the Chandalar Native Reserve, created under the Indian Reorganization Act, are two villages with a total population of 215 people. These are the villages of Venetie and Arctic Village. A few families reside on a small withdrawal near Fort Yukon. Originally 75 acres, a large part of the land has been washed into the Yukon River. Of the five villages surveyed, deeds have been issued in two of them, Circle and Fort Yukon. Alaska Natives hold 69 townsite lots by restricted title to allotments which total 525 acres.

Tentative approval has been granted to the selection by the state of 95,000 acres, most of the selections in the Manley Hot Springs area.

Almost one-third of the Arctic National Wildlife Range extends into this region, and one-fourth of the entire region is covered by the withdrawal for a proposed hydroelectric project dam at Rampart. This withdrawal also completely blankets the Chandalar Native Reserve.

The villages of the region have all joined in protests to disposal of the lands; and although no specific protests have been filed by the villages of Canyon Village, Circle, or Fort Yukon, they are embraced in the areas claimed by other villages. For example, the protest of the village of Chalkyitsik to more than 25 million acres extends into Canada, embraces areas contained in petitions filed by the villages of Fort Yukon and Birch Creek as well as the Chandalar Native Reserve for Venetie and Arctic Village. The Alaska-Canada border divides a natural ethnic boundary of Native people. In the late summer of 1968, an additional protest was filed by Rampart Village.

g 3.5 percent of
e population, live
ent of the area of

der the Indian
ulation of 215
Village. A few
. Originally 75
the Yukon River.
in two of them,
te lots by

selection by the
Manley Hot Springs

dlife Range extends
is covered by the
t Rampart. This
ive Reserve.

in protests to
sts have been
ort Yukon, they
For example, the
million acres
tions filed by
the Chandalar
laska-Canada
ople. In the
by Rampart

FIGURE V - 35

CURRENT LAND STATUS, UPPER YUKON - PORCUPINE REGION

Total Area		36,700,000 acres
Withdrawals		11,859,075 acres
Rampart PSC	8,959,000 acres	
Arctic N.W.R.	2,900,000 acres	
Chandalar N.R. (Venetie)	(1,408,000 acres)	
Ft. Yukon N.R.	75 acres	
State Selections		95,000 acres
Selected Only	0	
Tentatively Approved	95,000 acres	
Patented	0	
Other Patented or Claimed Lands		
Patented	2,500 acres	
Claimed/Entered	8,300 acres	
Mineral Leasing - none		
Mineral Locations		

47 areas - gold placer
4 areas - known production
50 areas - probable locations

Petitions under Act of May 1, 1936

Within region: Venetie, Stevens Village, Chalkyitsik, Fort Yukon, Circle (not platted).

Native Protests:

Within region

F-031708, Birch Creek Village, 882,900 acres
F-031865, Stevens Village, 1,604,300 acres
F-035292, Chalkyitsik Village, 25,628,500 acres
F-035287, Eagle Village, 529,700 acres
F-28 , Venetie and Arctic Villages, 7,920,600 acres
F-630 , Beaver Village, 2,753,300 acres
F- , Rampart Village filed July, 1968.

Overlap from adjacent regions

F-035257, North Slope Native Association, see Arctic region
F-456 , Tanana Village, see Tanana region

Public Domain - Estimate	24,700,000 acres

Source: U. S. Department of Interior, Bureau of Land Management, Division of Lands and Minerals, Anchorage, Alaska.

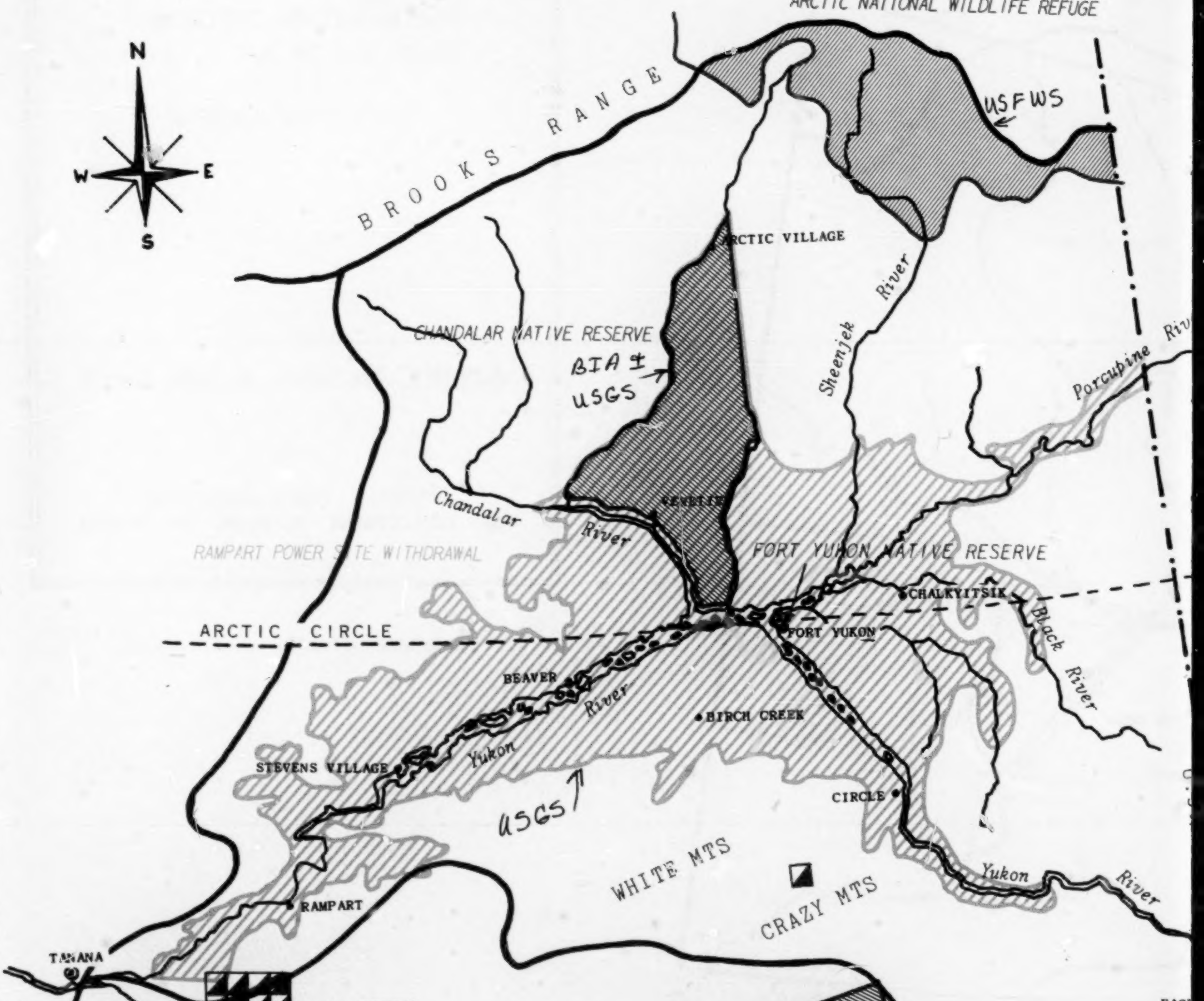
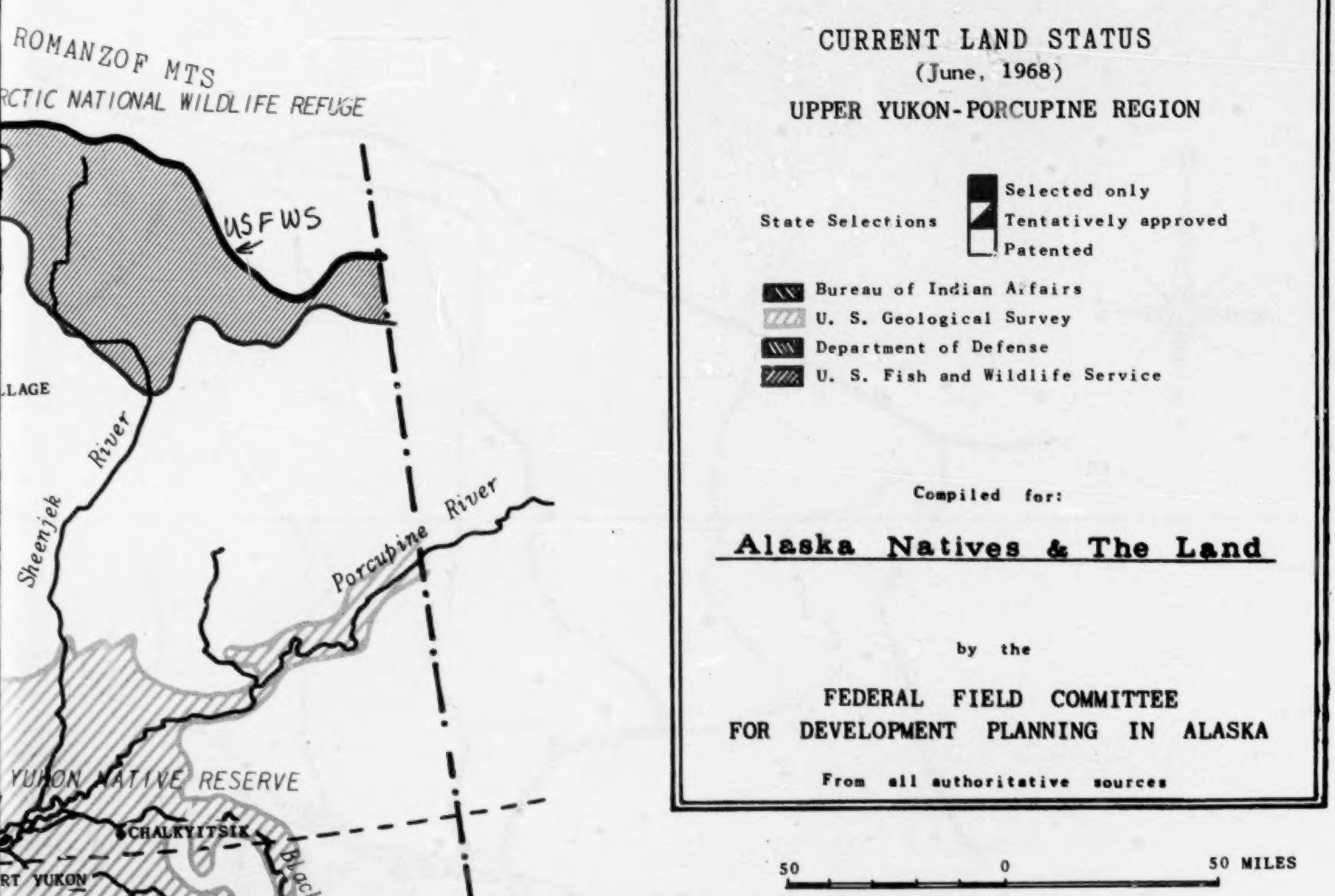

ROMANZOF MTS
ARCTIC NATIONAL WILDLIFE REFUGE
USFWS
N
W
E
S
BROOKS RANGE
ARCTIC VILLAGE
Sheenjek River
CHANDALAR NATIVE RESERVE
BIA &
USGS
Porcupine Riv
Chandalar River
VENETIE
RAMPART POWER SITE WITHDRAWAL
FORT YUKON NATIVE RESERVE
CHALKYITSIK
Black River
ARCTIC CIRCLE
FORT YUKON
BEAVER
BIRCH CREEK
Yukon River
STEVENS VILLAGE
CIRCLE
USGS
WHITE MTS
CRAZY MTS
Yukon River
RAMPART
TANANA
EY HOT SPRINGS
EAG
EIELSON AIR FORCE BASE & TEST RANGE

FIGURE V - 36


ROMANZOF MTS
RCTIC NATIONAL WILDLIFE REFUGE
USFWS
LLAGE
Sheenjek River
Porcupine River
YUKON NATIVE RESERVE
CHALKYITSIK
RT YUKON
Black River
CIRCLE
Yukon River
EAGLE
CANADA
U.S.A.
LY MTS
50
0
50 MILES

CURRENT LAND STATUS
(June, 1968)
UPPER YUKON-PORCUPINE REGION

State Selections
■ Selected only
◩ Tentatively approved
☐ Patented

▨ Bureau of Indian Affairs
▨ U. S. Geological Survey
▨ Department of Defense
▨ U. S. Fish and Wildlife Service

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FOR DEVELOPMENT PLANNING IN ALASKA

From all authoritative sources

FIGURE V – 36

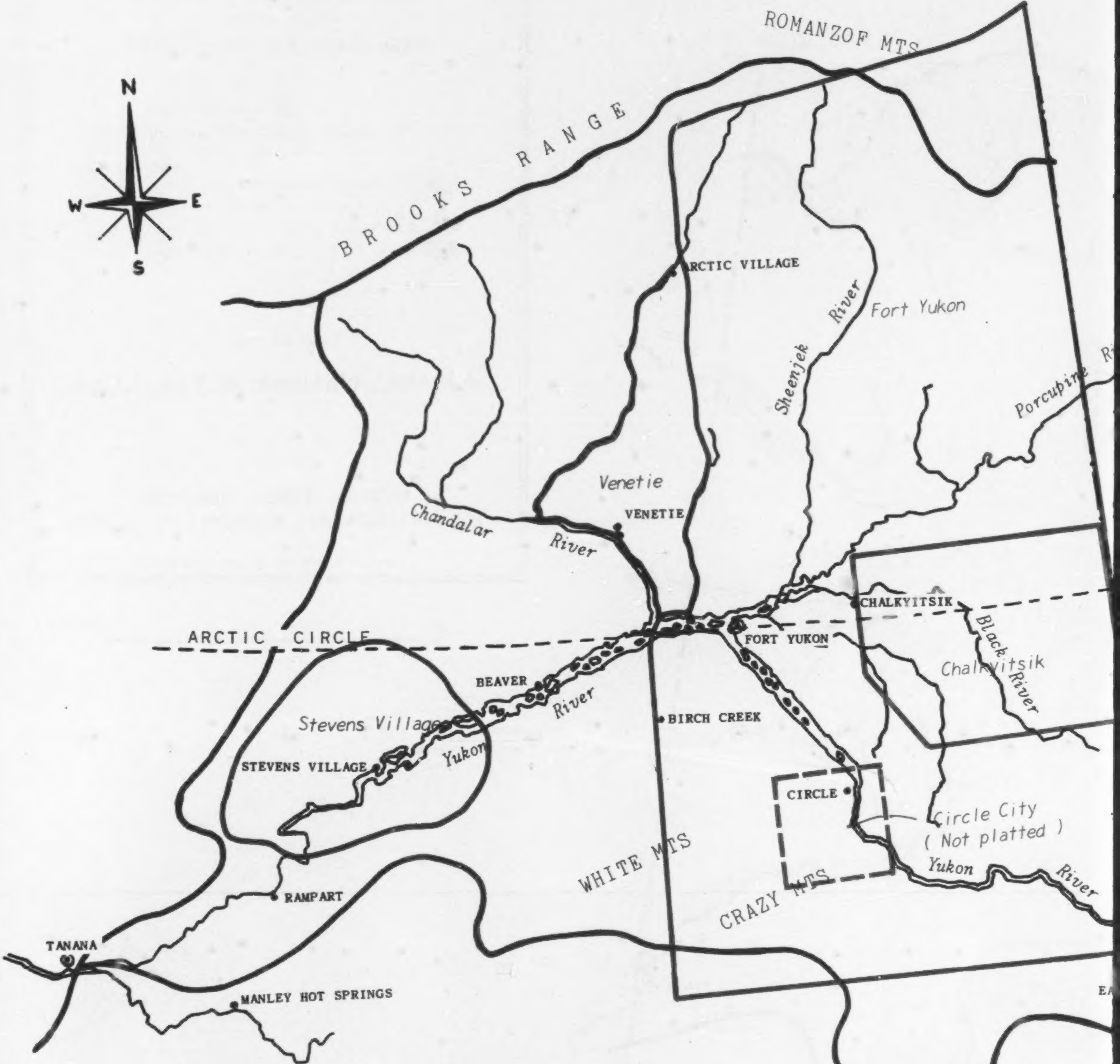
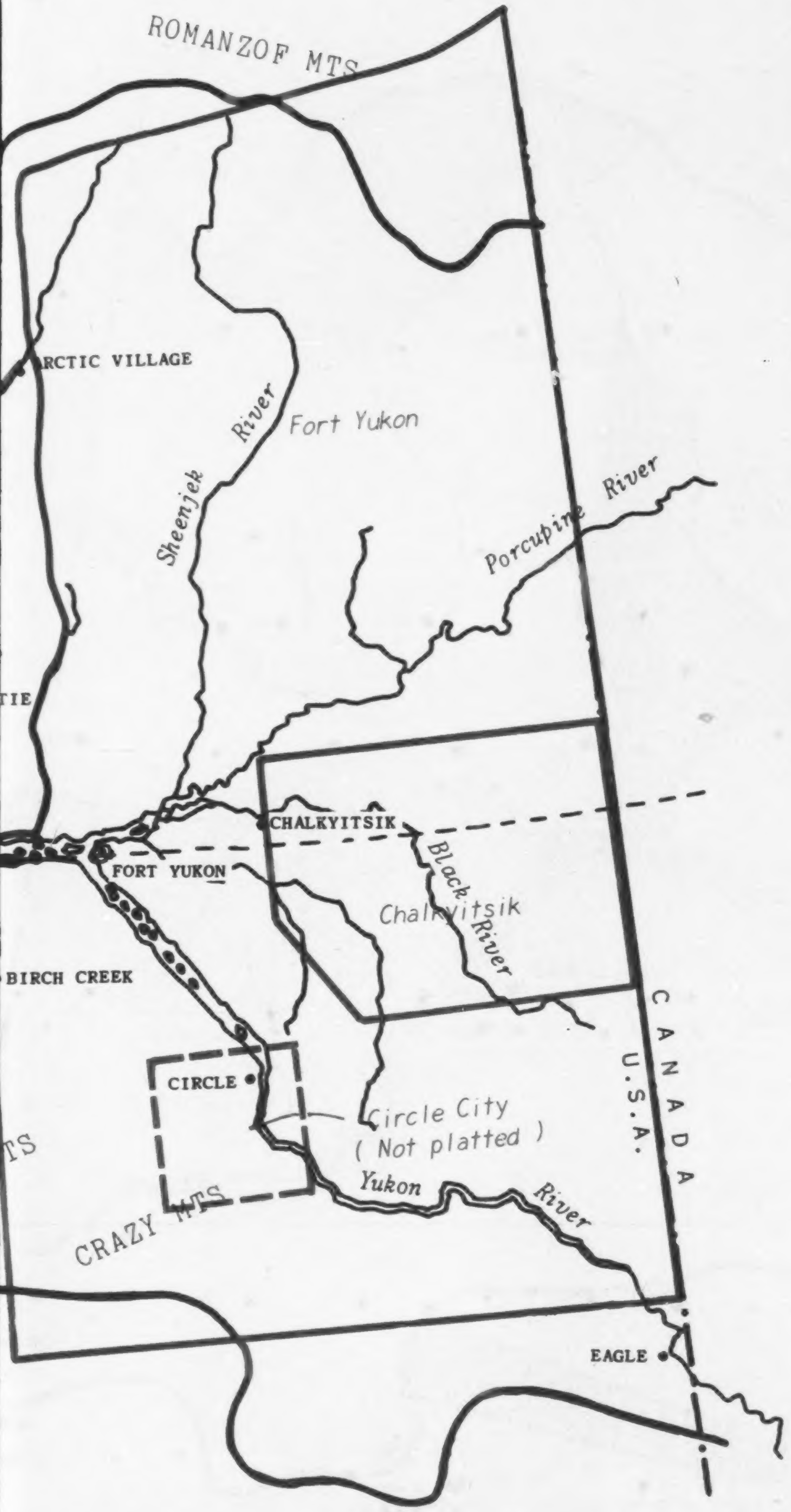

N
W
E
S
ROMANZOF MTS
BROOKS RANGE
ARCTIC VILLAGE
Sheenjek River
Fort Yukon
Porcupine Ri
Venetie
VENETIE
Chandalar River
CHALKYITSIK
Black River
Chalkyitsik
ARCTIC CIRCLE
FORT YUKON
BEAVER
Stevens Village
River
BIRCH CREEK
STEVENS VILLAGE
Yukon
CIRCLE
Circle City
(Not platted)
WHITE MTS
Yukon
River
CRAZY MTS
RAMPART
TANANA
MANLEY HOT SPRINGS
EA

FIGURE V - 37


ROMANZOF MTS
RCTIC VILLAGE
Fort Yukon
Sheenjek River
Porcupine River
TIE
CHALKYITSIK
Black River
FORT YUKON
Chalkyitsik
BIRCH CREEK
CIRCLE
Circle City
(Not platted)
TS
CRAZY MTS
Yukon River
CANADA
U.S.A.
EAGLE

ALASKA NATIVE PETITIONS UNDER ACT OF MAY 1, 1936

UPPER YUKON-PORCUPINE

Compiled for:

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FEDERAL FIELD COMMITTEE
FOR DEVELOPMENT PLANNING IN ALASKA

From all authoritative sources

50 0 50 MILES

FIGURE V - 37

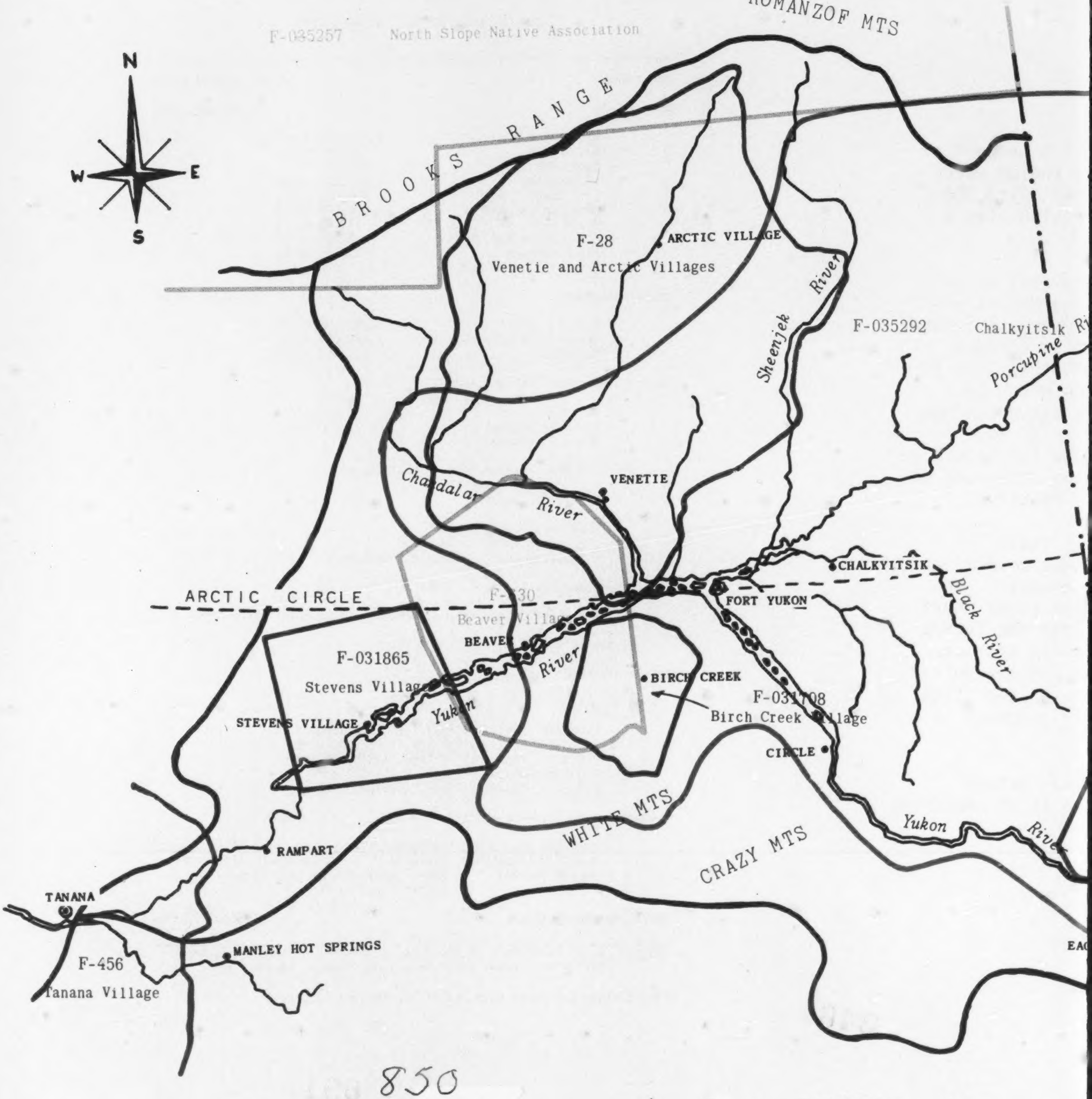
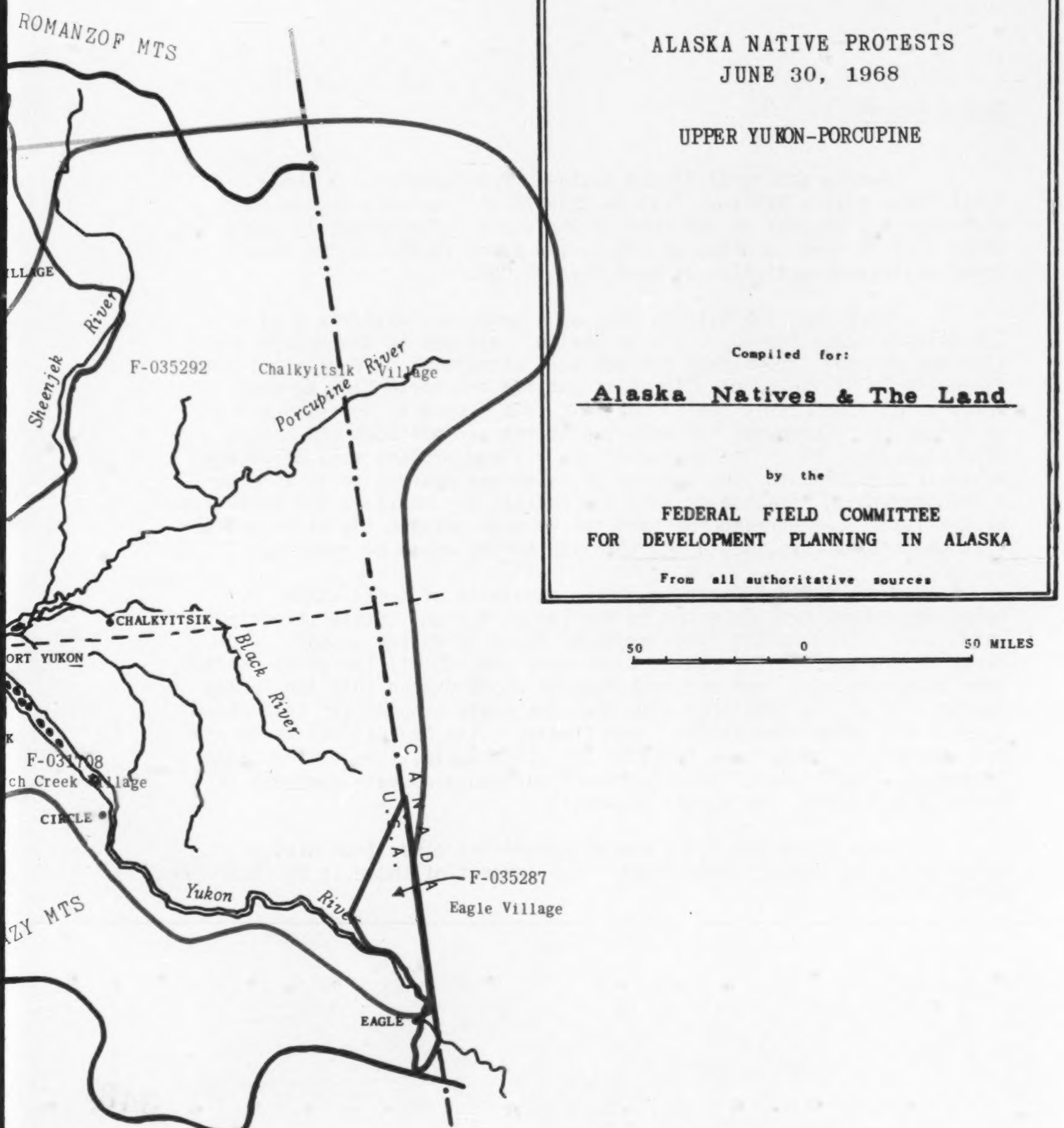

F-035257 North Slope Native Association
ROMANZOF MTS
N
W
E
S
BROOKS RANGE
F-28
ARCTIC VILLAGE
Venetie and Arctic Villages
Sheenjek River
F-035292
Chalkyitsik Ri
Porcupine
Chandalar River
VENETIE
CHALKYITSIK
ARCTIC CIRCLE
F-530
Beaver Villag
FORT YUKON
Black River
BEAVER
F-031865
Stevens Village
River
BIRCH CREEK
F-031708
Birch Creek Village
STEVENS VILLAGE
Yukon
CIRCLE
WHITE MTS
Yukon River
CRAZY MTS
RAMPART
TANANA
MANLEY HOT SPRINGS
F-456
Tanana Village
EA

FIGURE V - 38


ROMANZOF MTS
ILLAGE
Sheenjek River
F-035292
Chalkyitsik Village
Porcupine River
CHALKYITSIK
ORT YUKON
Black River
F-031708
ch Creek Village
CIRCLE
C A N A D A
U. S. A.
F-035287
Eagle Village
Yukon River
ZY MTS
EAGLE
50
0
50 MILES

ALASKA NATIVE PROTESTS
JUNE 30, 1968

UPPER YUKON-PORCUPINE

Compiled for:

Alaska Natives & The Land

by the

FEDERAL FIELD COMMITTEE
FOR DEVELOPMENT PLANNING IN ALASKA

From all authoritative sources

FIGURE V - 38

Tanana Region

Nearly 600 rural Alaska Natives, representing 1.5 percent of total rural Alaska Natives, live in this 32 million-acre region which comprises 8.5 percent of the area of the state. Approximately 2,200 other Natives live in urban or non-Native towns in the region with a total estimated population of more than 45,000.

Less than 100 Natives live on a temporary withdrawal of over 3/4 million acres for their use at Tetlin. Natives in the Nenana area also may use the timber from the 500-acre withdrawal of Porgie's Island. There are 37 Native-owned allotments outside the North Star Borough which total 4,000 acres and 13 townsite lots issued in Northway and 24 in Tanacross. These are the only two of the six villages which have been surveyed. It is the survey of the village of Tanacross which now presents a problem for the Natives of Tanacross who desire to move to a less hazardous location on land now tentatively approved for selection by the state. An exchange of land can be made between the state and the village of Tanacross, but a new townsite survey would be required.

Over 5,000,000 acres, nearly one-third of total state selections, have been selected in the Tanana Region. State selections in this area brought the first protests filed by Native groups. Protests of villages in the region total more than 20 million acres apart from those protests from adjacent regions which extend into the Tanana Region. It was in this area also that the state brought its test case against the imposition of the "land freeze." The Nenana Indians joined as intervenors in the case filed by the state against the United States. In August, 1968, federal District Court entered a summary judgment in favor of the state. An appeal is pending.

Over 4,000,000 acres are withdrawn for other than Native purposes by the federal government. The largest of these is Mt. McKinley National Park.

852

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region with a

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Star Borough
Northway and 24
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across which now
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the state and the
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State selections
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lion acres anart
into the Tanana
nt its test case
na Indians joined
the United States.
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than Native
ese is Mt. McKinley

FIGURE V-39

CURRENT LAND STATUS, TANANA REGION

Total Area		32,000,000 acres
Withdrawals		4,895,300 acres
McKinley N.P.	1,939,000 acres	
Tetlin N.R.	768,000 acres	
Ladd AFB*	655,000 acres	
Ft. Greeley	623,500 acres	
Test Range	607,800 acres	
Ladd-Eielson AFB*	256,000 acres	
Clear AFB	34,000 acres	
Clear Creek Rec. Site	2,000 acres	
Miscellaneous	10,000 acres	
Porgie's Island N.R.	(500)acres	
State Selections		5,460,000 acres
Selected Only	1,850,000 acres	
Tentatively Approved	2,680,000 acres	
Patented	930,000 acres	
Other Patented or Claimed Lands		
Patented	5,000 acres	
Claimed/Entered	21,000 acres	
Mineral Leasing		

3 areas--state/federal coal leases

Mineral Locations

67 areas--gold placer
22 areas--known production
Numerous areas--probable locations

Petitions under Act of May 1, 1936:

Within region: Minto, Nenana, Northway, Tanacross, Birch Creek

Partially within region: Fort Yukon

Native Protests:

Within region

F-028755, Minto Indians, 1,160,300 acres
F-028757, Northway Village, 4,732,400 acres
F-028758, Tanacross Village, 6,544,400 acres
F-030957, Nenana Indians, 2,966,500 acres
F-456 , Tanana Village, 5,167,000 acres

Overlap from adjacent regions

A-061650 (F-033402), Mentasta Village, see Copper River region
A-067547 (F-035181), Cantwell Village, see Cook Inlet region
AA-545 (F-155) , Ahtna Tannah Ninnah Association, see Copper River region

Public Domain--Estimate	21,600,000 acres

Source: U. S. Department of the Interior, Bureau of Land Management, Division of Lands and Minerals, Anchorage, Alaska.

*Now Eielson Air Force Base and Ft. Wainwright Army Base

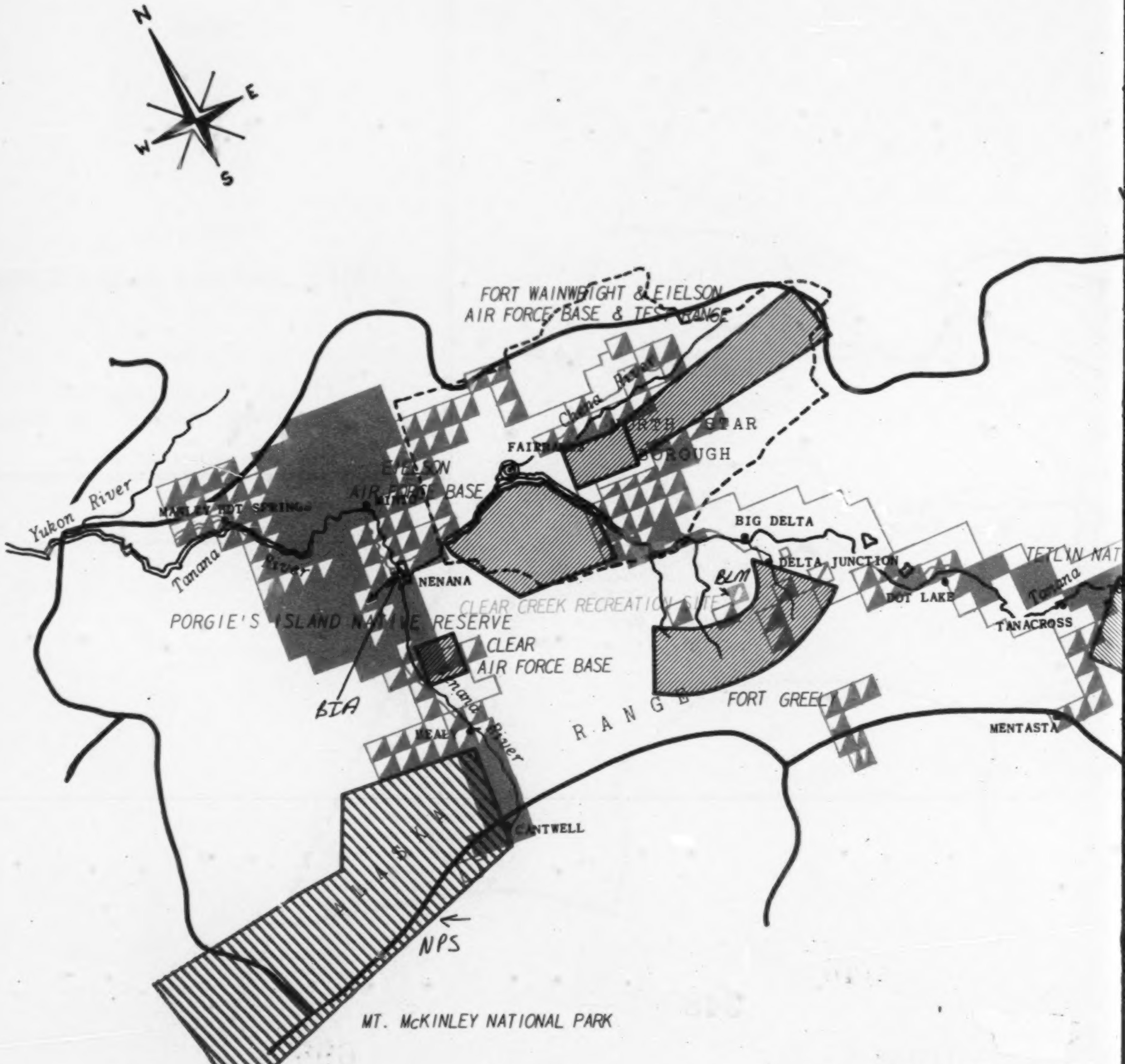

N
E
W
S
FORT WAINWRIGHT & EIELSON
AIR FORCE BASE & TEST RANGE
Chena River
NORTH STAR
BOROUGH
FAIRBANKS
EIELSON
AIR FORCE BASE
Yukon River
MANLEY HOT SPRINGS
MINTO
Tanana
River
NENANA
BIG DELTA
DELTA JUNCTION
BLM
DOT LAKE
TETLIN NAT
Tanana
TANACROSS
CLEAR CREEK RECREATION SITE
PORGIE'S ISLAND NATIVE RESERVE
CLEAR
AIR FORCE BASE
BIA
Nenana River
HEALY
RANGE
FORT GREELY
MENTASTA
ALASKA
CANTWELL
NPS
MT. McKINLEY NATIONAL PARK

FIGURE V - 40

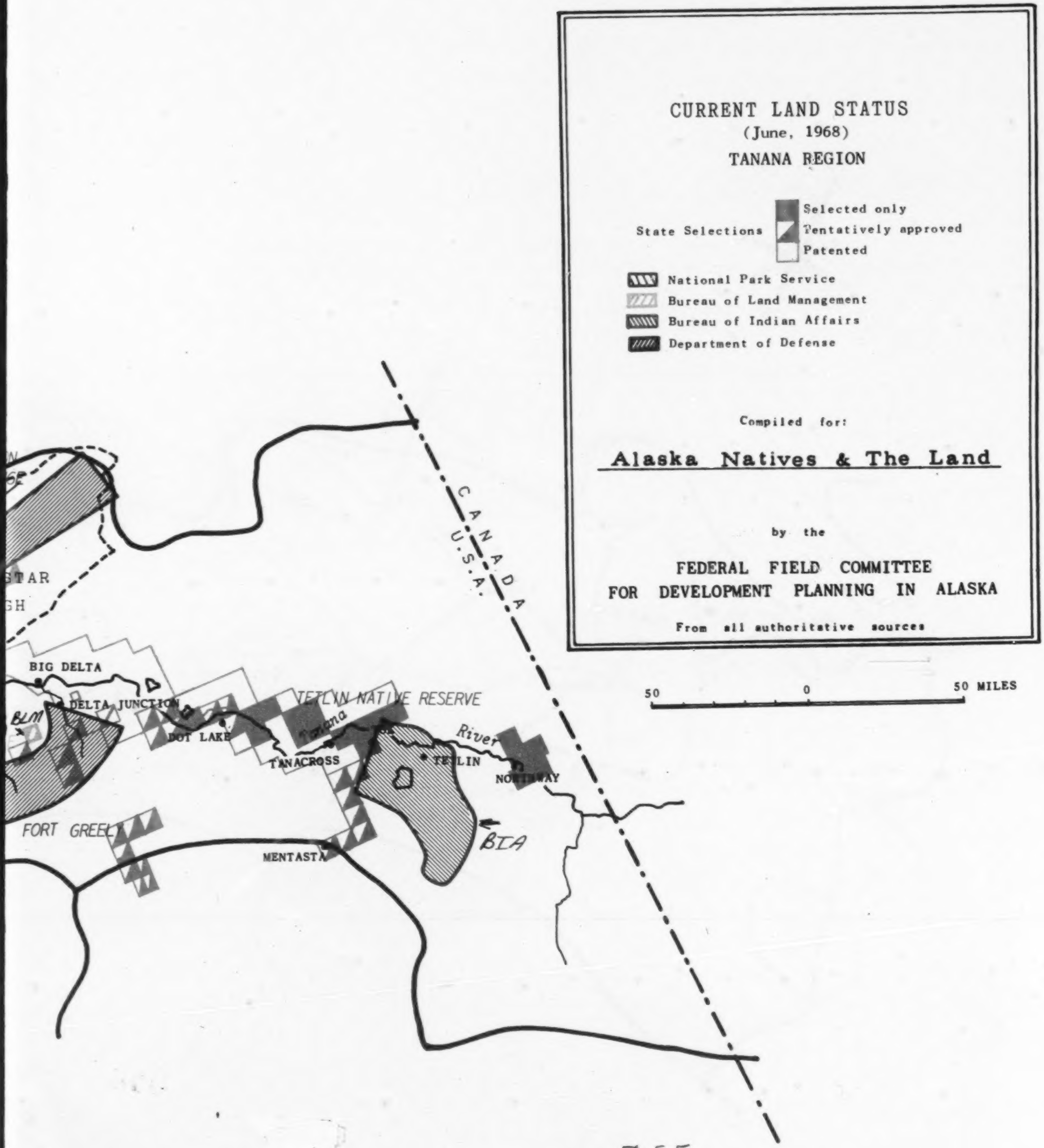
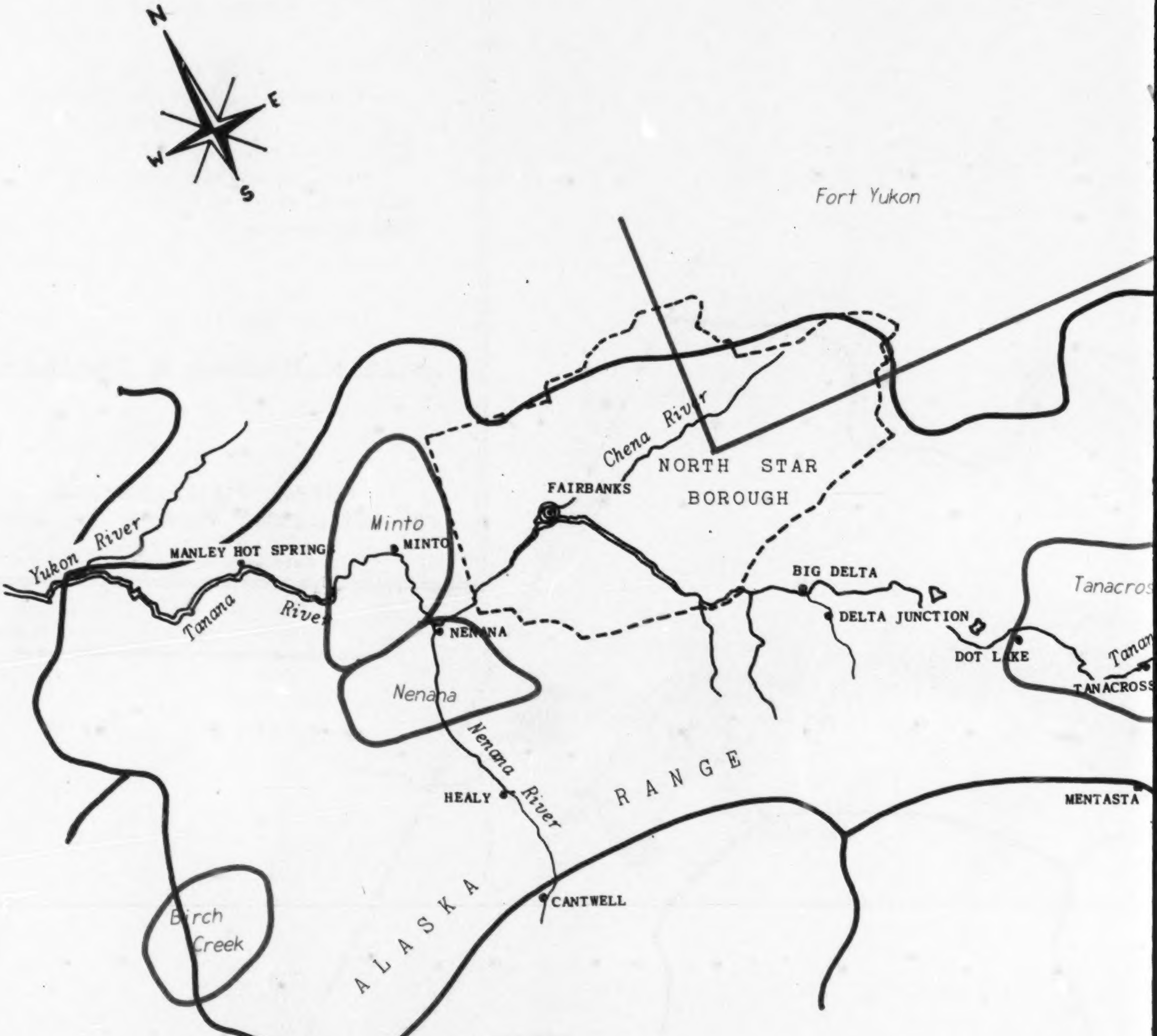

CURRENT LAND STATUS
(June, 1968)
TANANA REGION
State Selections
Selected only
Tentatively approved
Patented
National Park Service
Bureau of Land Management
Bureau of Indian Affairs
Department of Defense
Compiled for:
Alaska Natives & The Land
by the
FEDERAL FIELD COMMITTEE
FOR DEVELOPMENT PLANNING IN ALASKA
From all authoritative sources
50
0
50 MILES
CANADA
U.S.A.
BIG DELTA
DELTA JUNCTION
BLM
DOT LAKE
TETLIN NATIVE RESERVE
Tanana
River
TANACROSS
TETLIN
NORTHWAY
BIA
FORT GREELY
MENTASTA
STAR
GH

FIGURE V - 40


N
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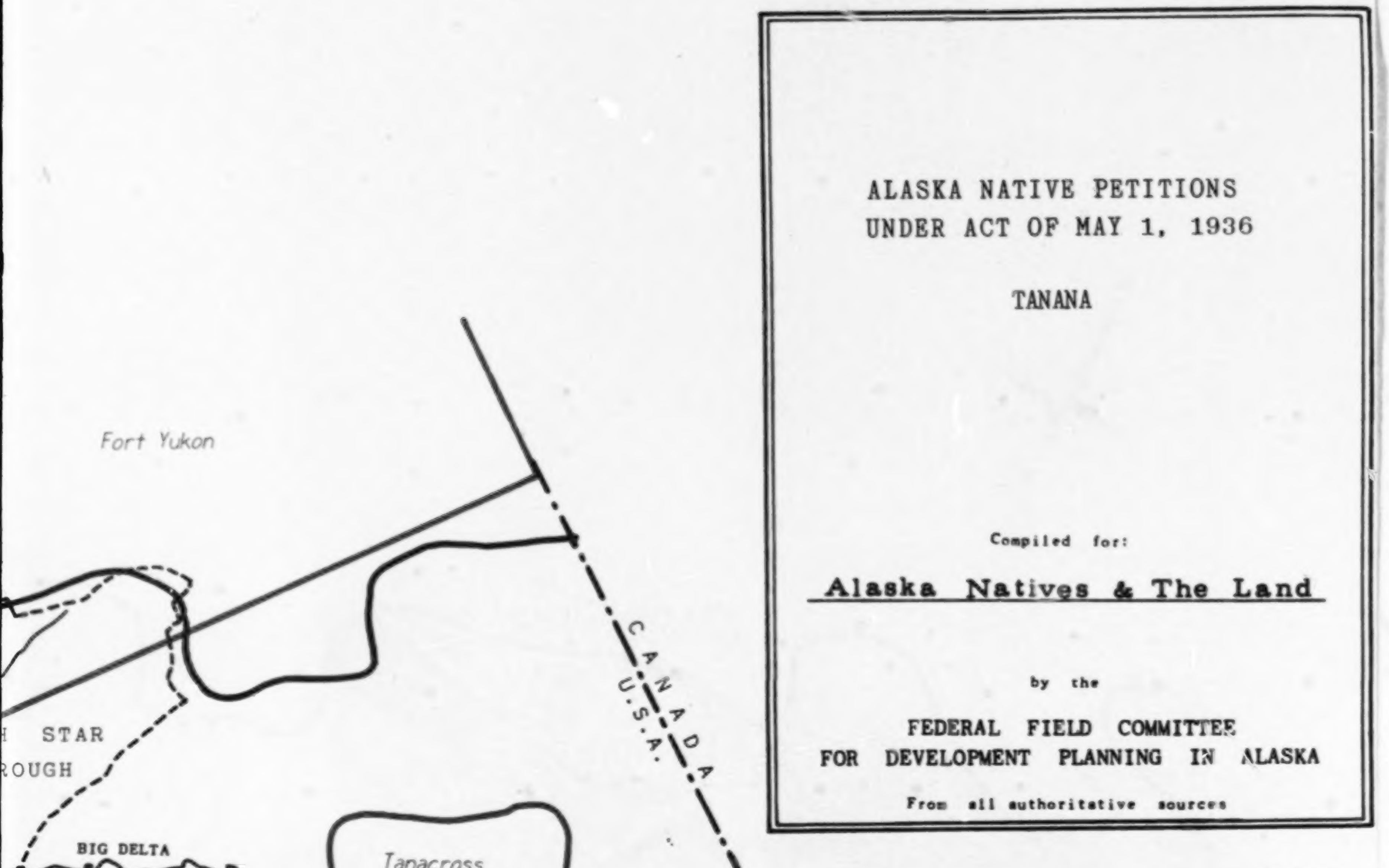
W
S
Fort Yukon
NORTH STAR
BOROUGH
Chena River
FAIRBANKS
Minto
MINTO
MANLEY HOT SPRINGS
Yukon River
Tanana River
NENANA
Nenana
Nenana River
HEALY
ALASKA RANGE
CANTWELL
Birch Creek
BIG DELTA
DELTA JUNCTION
DOT LAKE
Tanacros
Tanan
TANACROSS
MENTASTA

856

FIGURE V - 41


ALASKA NATIVE PETITIONS
UNDER ACT OF MAY 1, 1936

TANANA

Compiled for:

Alaska Natives & The Land

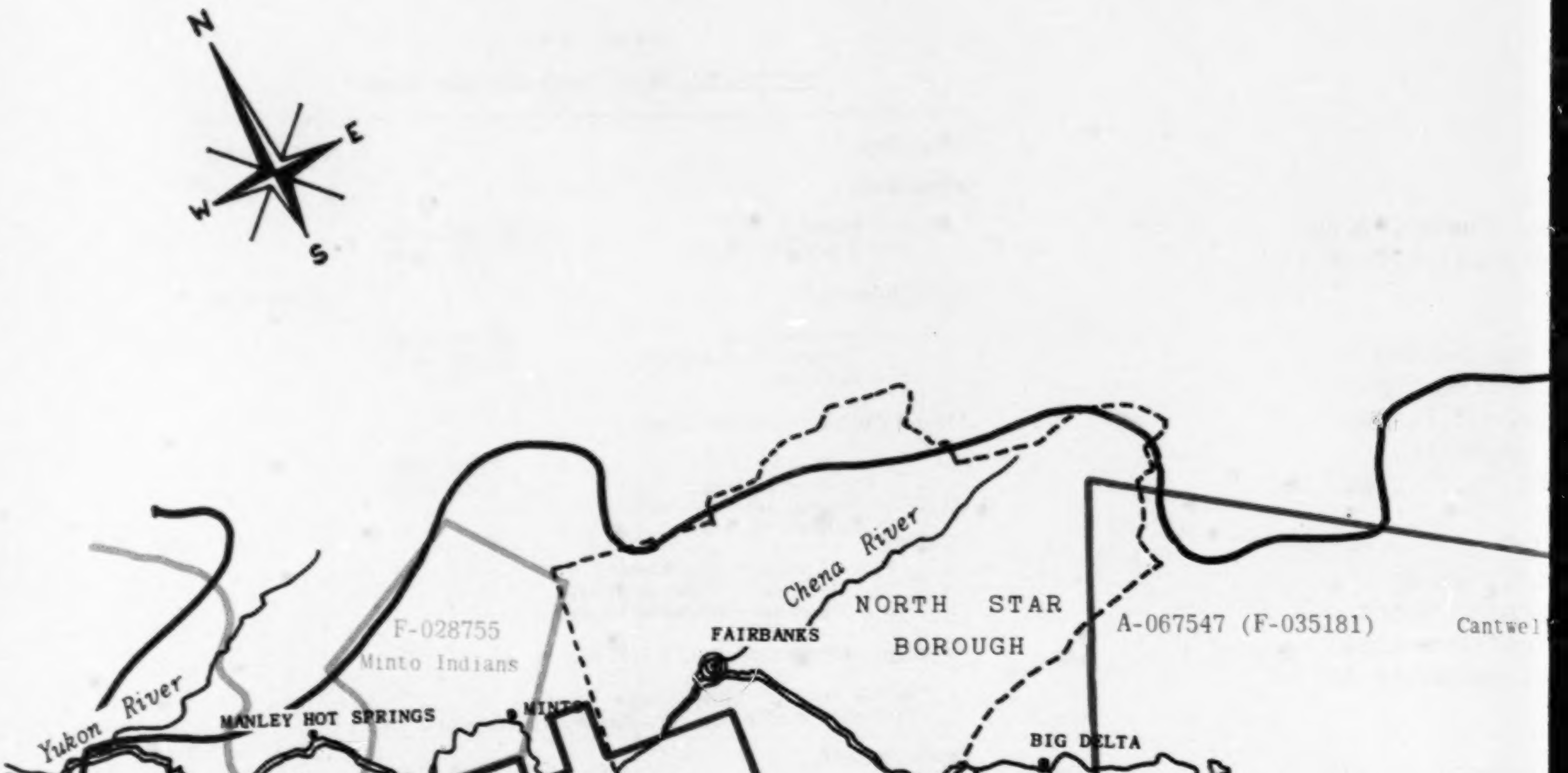
by the

FEDERAL FIELD COMMITTEE
FOR DEVELOPMENT PLANNING IN ALASKA

From all authoritative sources

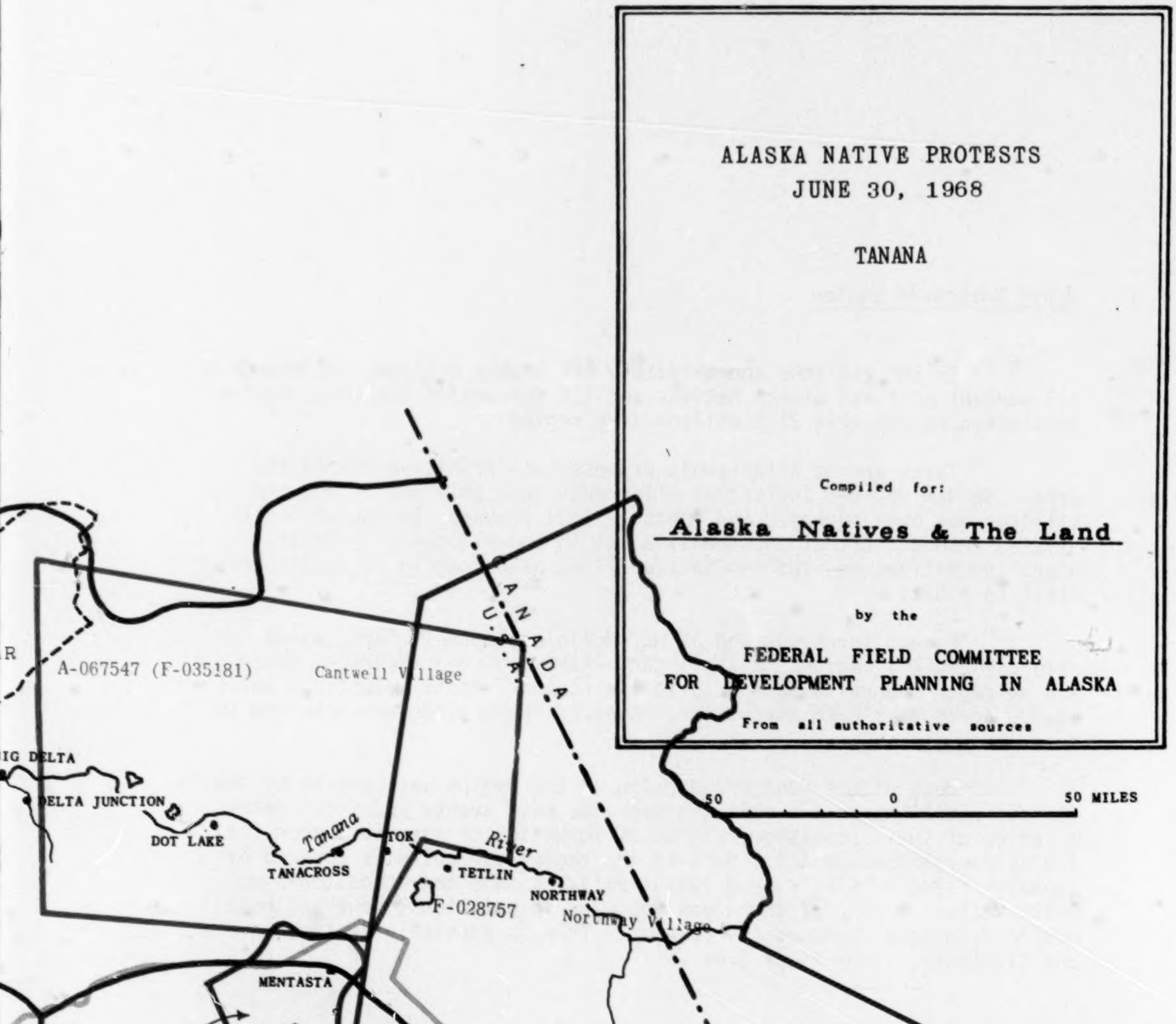
50
0
50 MILES
Fort Yukon
CANADA
U.S.A.
STAR
OUGH
BIG DELTA
DELTA JUNCTION
DOT LAKE
Tanacross
Tanana
River
TANACROSS
TOK
TETLIN
NORTHWAY
Northway
MENTASTA
E

FIGURE V - 41


N
E
W
S
Yukon River
MANLEY HOT SPRINGS
Tanana River
F-028755
Minto Indians
MINTO
NENANA
F-456
Tanana Village
F-028758
Tanacross Village
Chena River
FAIRBANKS
NORTH STAR
BOROUGH
BIG DELTA
DELTA JUNCTION
DOT LAKE
Tanana
TANACROSS
A-067547 (F-035181)
Cantwel
Nenana River
HEALY
ALASKA RANGE
F-030957
Nenana Indians
CANTWELL
MENTASTA
A-061650 (F-033402)
Mentasta Village
AA-545 (F-155)
Ahtna Tannah Ni

858

FIGURE V - 42



ALASKA NATIVE PROTESTS
JUNE 30, 1968

TANANA

Compiled for:

Alaska Natives & The Land

by the

FEDERAL FIELD COMMITTEE
FOR DEVELOPMENT PLANNING IN ALASKA

From all authoritative sources

50 0 50 MILES
CANADA
U.S.A.
A-067547 (F-035181)
Cantwell Village
BIG DELTA
DELTA JUNCTION
DOT LAKE
Tanana
River
TANACROSS
TOK
TETLIN
NORTHWAY
F-028757
Northway Village
MENTASTA
A-061650 (F-033402)
Mentasta Village
AA-545 (F-155) Ahtna Tannah Ninnah Association

FIGURE V - 42

Upper Kuskokwim Region

In ten villages approximately 670 Alaska Natives, representing 1.7 percent of rural Alaska Natives and 1.5 percent of the total Native population, occupy this 21.5 million-acre region.

There are no withdrawals or reserves for Native use in the area. No Natives own individual allotments, and only one of the ten villages has been surveyed and townsite lots issued. Bureau of Indian Affairs records reflect one townsite lot in the village of McGrath, where 100 Natives and 100 non-Natives live, as belonging in restricted title to a Native.

Except for a portion of Mt. McKinley National Park, which extends into the region, and a military withdrawal near McGrath, there are no major federal withdrawals in the region. State selections total 65,000 acres near Lake Minchumina. None of these lands are patented to date.

Most of the southern portion of the region was covered by the various petitions of the villages over the past twenty years for determination of their possessory rights or formation of reserves under the Indian Reorganization Act. Most of the region currently is covered by protests filed by Nikolai and Telida villages and the Nondalton-Lime Hills Natives. Some of the areas included in petitions, however, have not to date been included in protests. This is particularly true in the Sleetmute, Stony River area.

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of McGrath,
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Park, which
IcGrath, there
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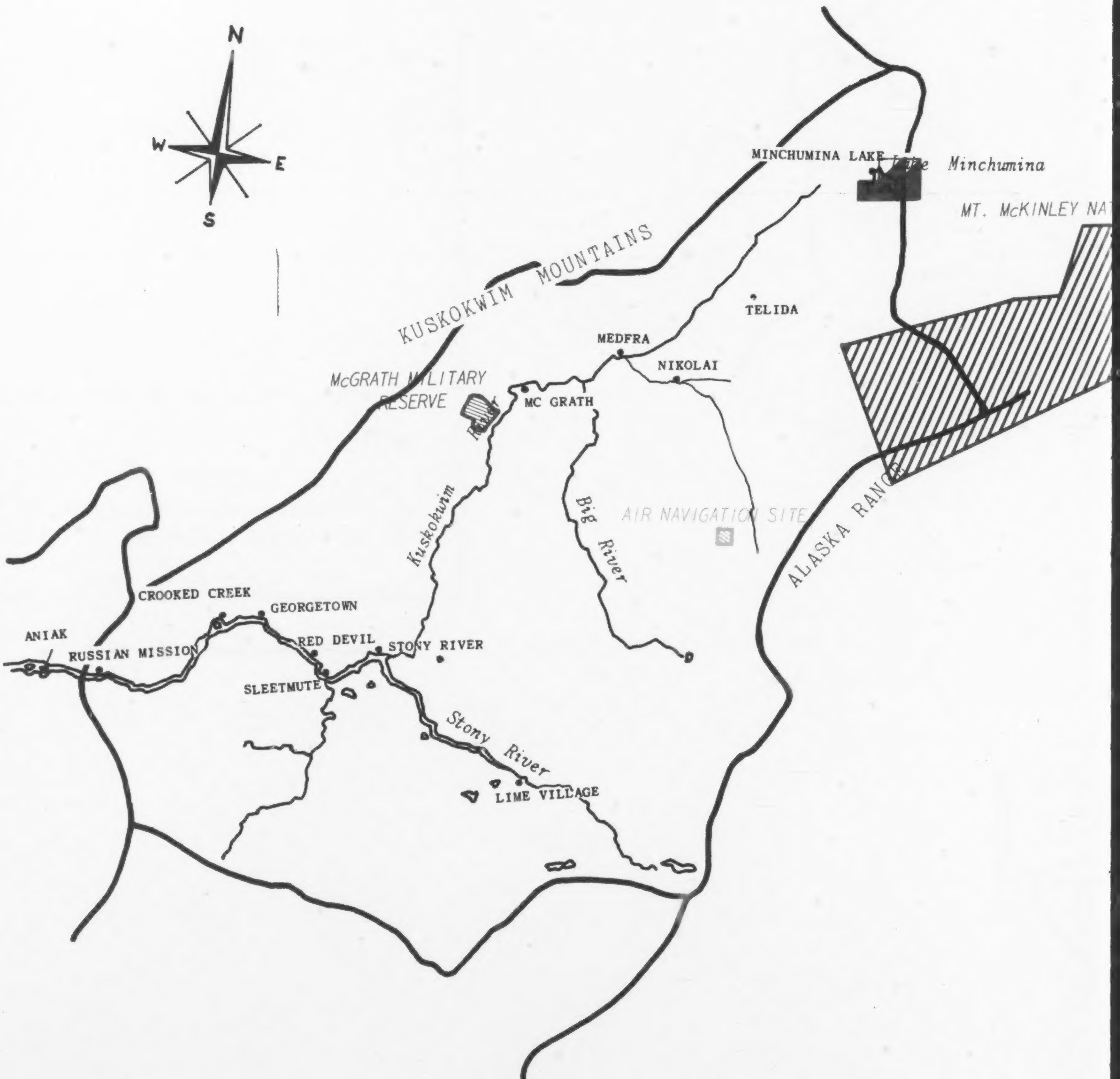
years for deter-
erves under the
is covered by
Nondalton-Lime
, however, have
larly true in

FIGURE V-43

CURRENT LAND STATUS, UPPER KUSKOKWIM REGION

Total Area		21,500,000 acres
Withdrawals		204,000 acres
McKinley N.P.	200,000 acres	
McGrath Military	4,000 acres	
State Selections		65,000 acres
Selected Only	45,000 acres	
Tentatively Approved	20,000 acres	
Patented	0	
Other Patented or Claimed Lands		
Patented	2,500 acres	
Claimed/Entered	4,000 acres	
Mineral leasing - none		
Mineral locations		
15 areas - gold placer		
7 areas - known production		
16 areas - probable locations		
Petitions under Act of May 1, 1936:		
Within region: Lime Village		
Partially within region: Sleetmute, Kwethluk		
Native Protests:		
Within region		
AA-681 (F-392), Nikolai and Telida Villages, 9,383,700 acres		
AA-699 (F-440), Nondalton-Lime Hills Natives, 20,028,600 acres, see also Bristol Bay and Cook Inlet regions		
Overlap from adjacent regions		
AA-373 (F-108), Bethel Villages, see Y-K Delta region		
F-456 , Tanana, see Tanana region		
F-504 , Holy Cross, see Yukon-Koyukuk region		
Public Domain - Estimate		21,200,000 acres

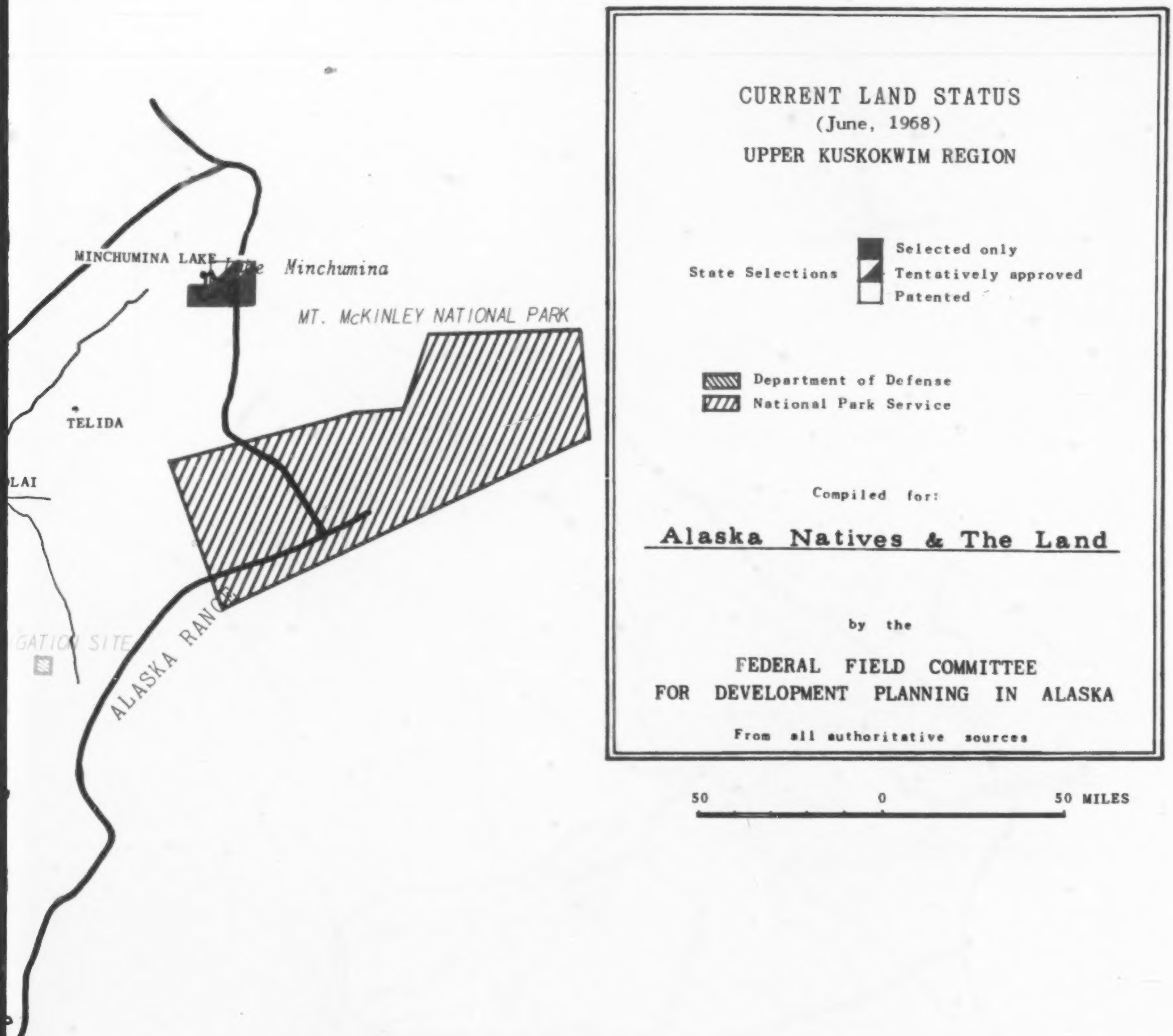
Source: U. S. Department of Interior, Bureau of Land Management, Division of Lands and Minerals, Anchorage, Alaska.



N
W
E
S
MINCHUMINA LAKE
Lake Minchumina
MT. McKINLEY NA
KUSKOKWIM MOUNTAINS
TELIDA
MEDFRA
NIKOLAI
McGRATH MILITARY RESERVE
MC GRATH
River
Kuskokwim
Big River
AIR NAVIGATION SITE
ALASKA RANGE
CROOKED CREEK
GEORGETOWN
ANIAK
RUSSIAN MISSION
RED DEVIL
STONY RIVER
SLEETMUTE
Stony River
LIME VILLAGE

862

FIGURE V - 44


MINCHUMINA LAKE
Lake Minchumina
MT. McKINLEY NATIONAL PARK
TELIDA
LAI
GATION SITE
ALASKA RANGE
State Selections
Selected only
Tentatively approved
Patented
Department of Defense
National Park Service
50
0
50 MILES

CURRENT LAND STATUS
(June, 1968)
UPPER KUSKOKWIM REGION

Compiled for:

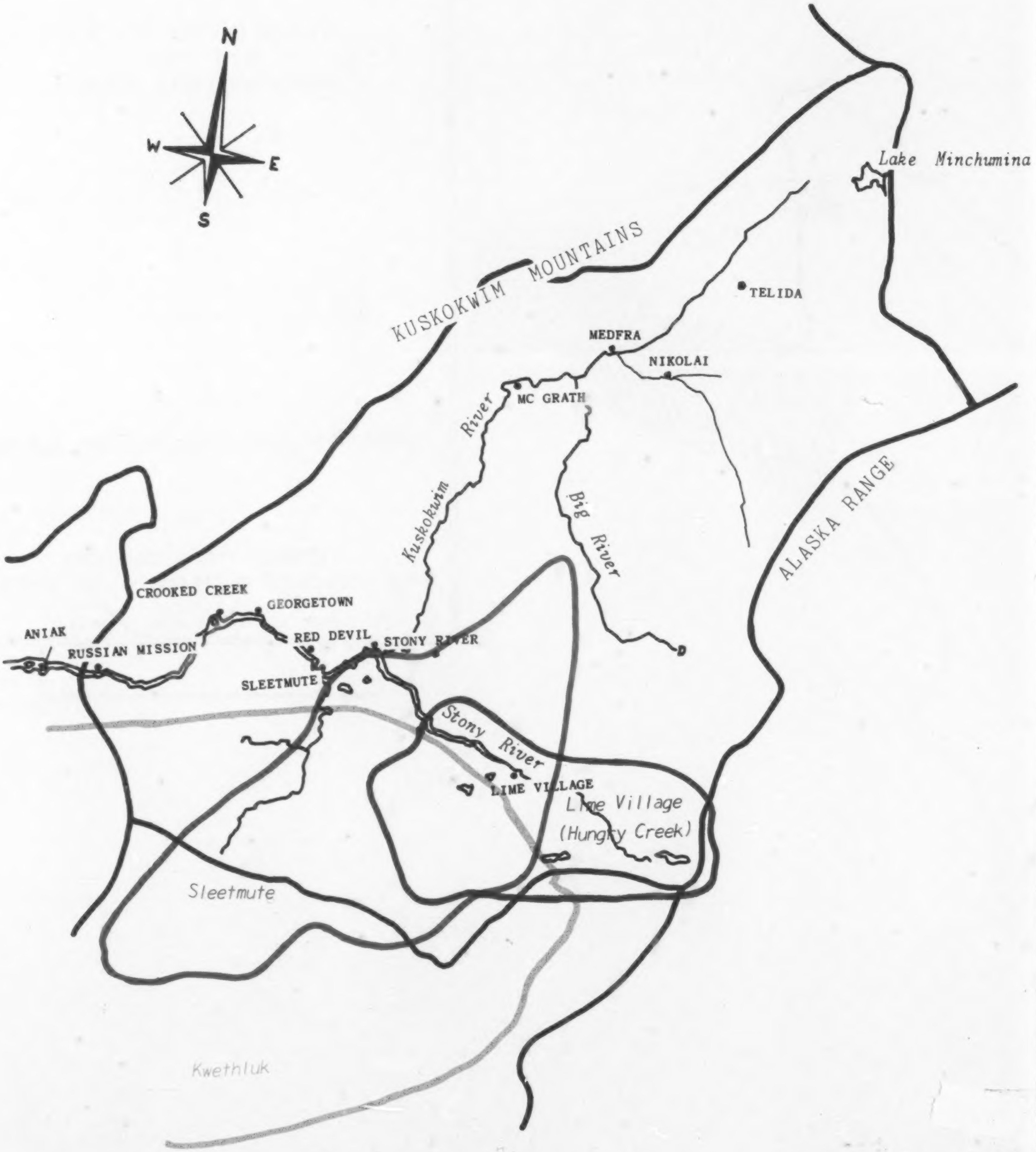
Alaska Natives & The Land

by the

FEDERAL FIELD COMMITTEE
FOR DEVELOPMENT PLANNING IN ALASKA

From all authoritative sources

FIGURE V - 44


N
W
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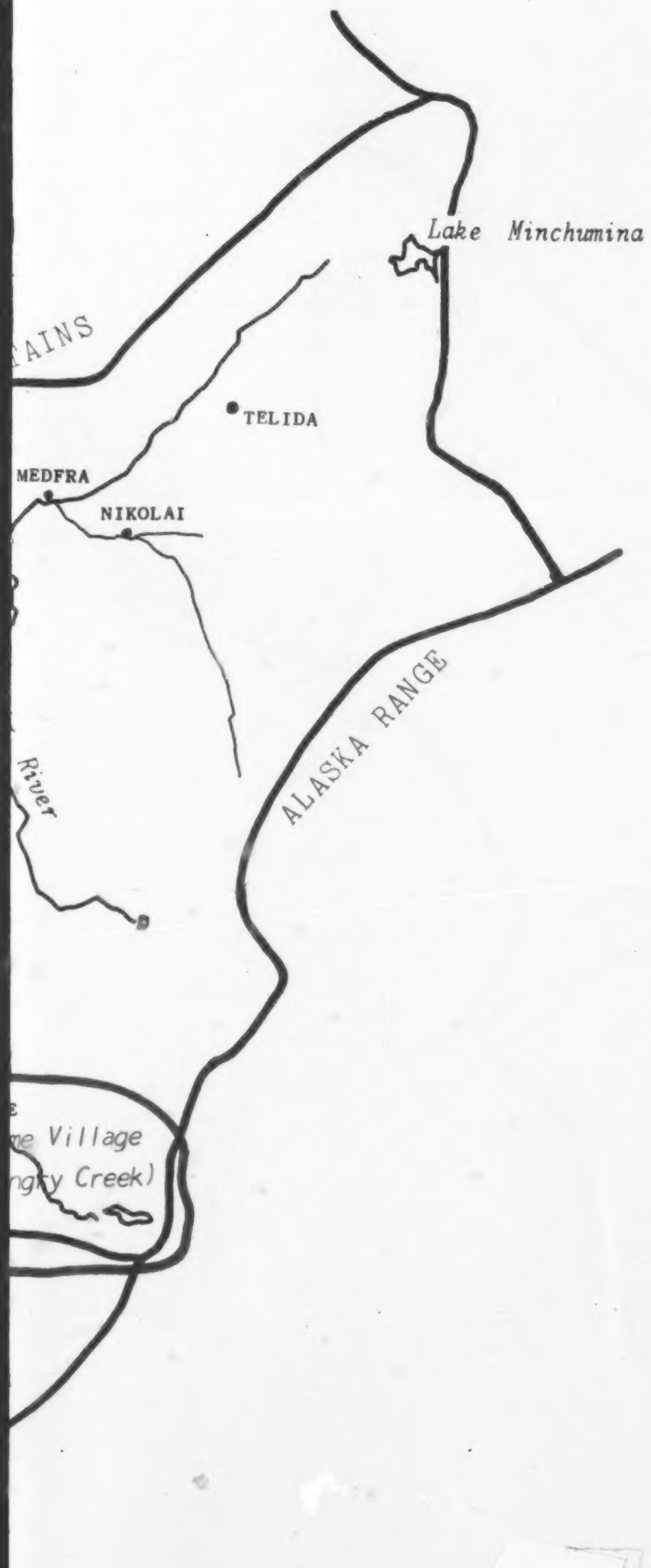
S
KUSKOKWIM MOUNTAINS
Lake Minchumina
TELIDA
MEDFRA
NIKOLAI
MC GRATH
Kuskokwim River
Big River
ALASKA RANGE
CROOKED CREEK
GEORGETOWN
ANIAK
RUSSIAN MISSION
RED DEVIL
STONY RIVER
SLEETMUTE
Stony River
LIME VILLAGE
Lime Village
(Hungry Creek)
Sleetmute
Kwethluk

864

FIGURE V - 45


Lake Minchumina
TAINS
TELIDA
MEDFRA
NIKOLAI
River
ALASKA RANGE
E
me Village
ngry Creek)

ALASKA NATIVE PETITIONS
UNDER ACT OF MAY 1, 1936

UPPER KUSKOKWIM

Compiled for:

Alaska Natives & The Land

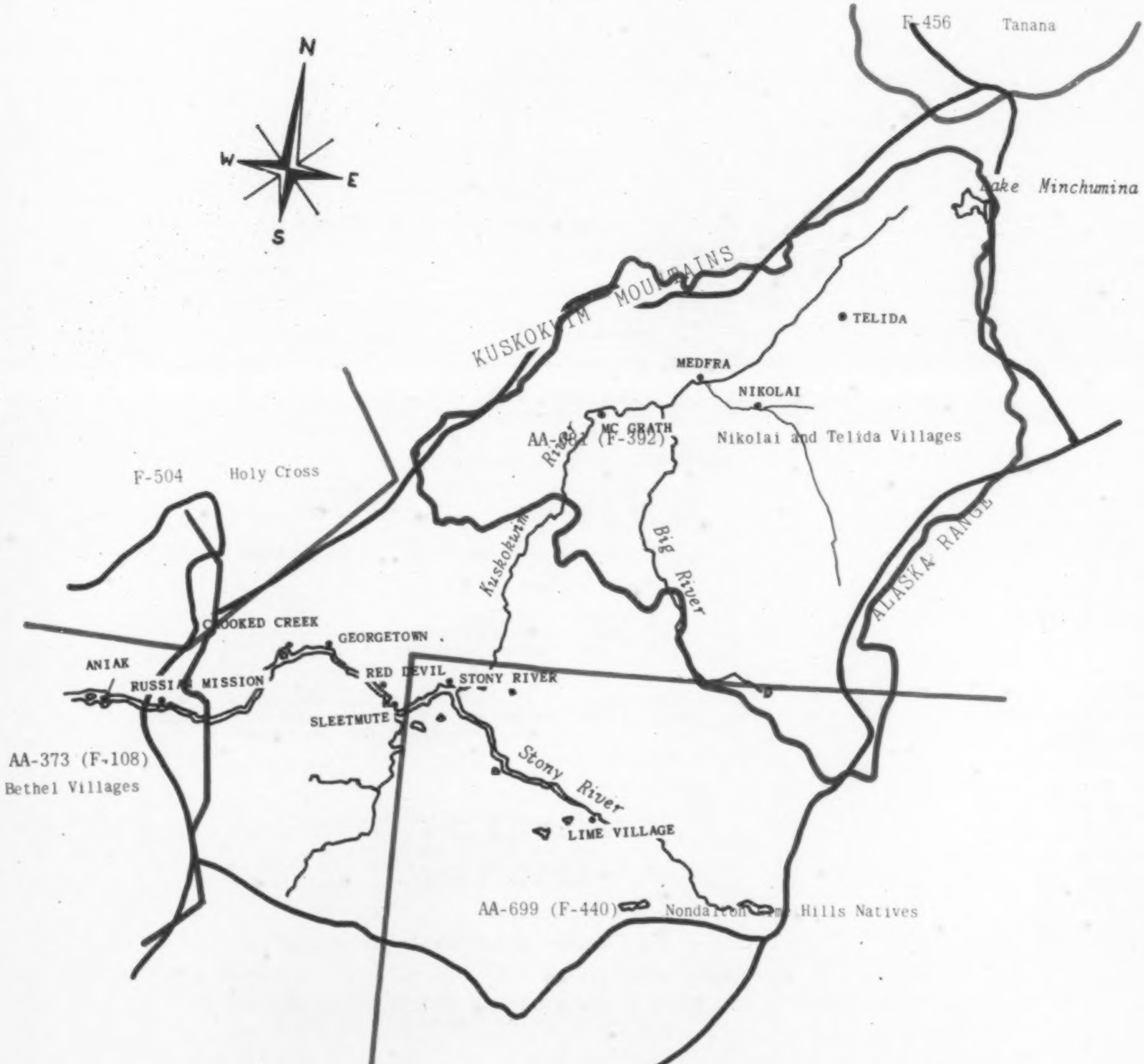
by the

FEDERAL FIELD COMMITTEE
FOR DEVELOPMENT PLANNING IN ALASKA

From all authoritative sources

50 0 50 MILES

FIGURE V - 45


N
W
E
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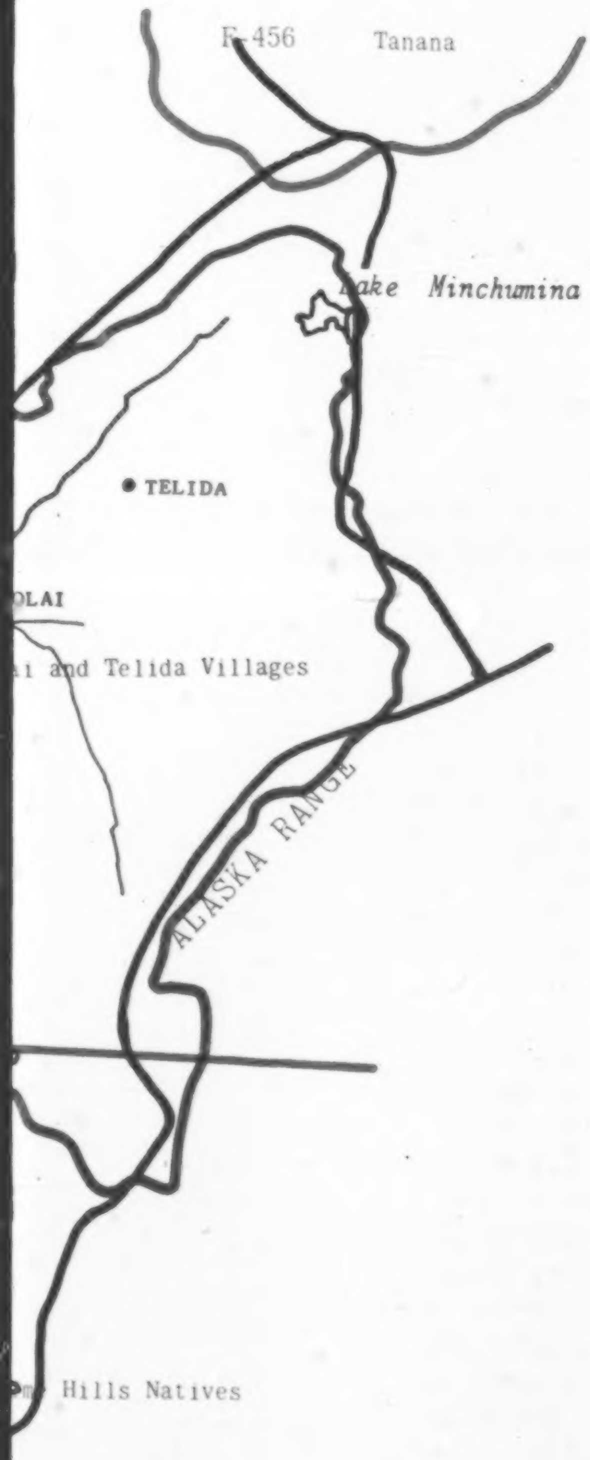
F-456
Tanana
Lake Minchumina
KUSKOKWIM MOUNTAINS
TELIDA
MEDFRA
NIKOLAI
MC GRATH
AA-681 (F-392)
Nikolai and Telida Villages
F-504
Holy Cross
Kuskokwim River
Big River
ALASKA RANGE
CROOKED CREEK
GEORGETOWN
ANIAK
RUSSIAN MISSION
RED DEVIL
STONY RIVER
SLEETMUTE
AA-373 (F-108)
Bethel Villages
Stony River
LIME VILLAGE
AA-699 (F-440)
Nondalton-Lime Hills Natives

866

FIGURE V - 46


F-456
Tanana
Lake Minchumina
TELIDA
OLAI
ai and Telida Villages
ALASKA RANGE
Hills Natives

ALASKA NATIVE PROTESTS
JUNE 30, 1968

UPPER KUSKOKWIM

Compiled for:

Alaska Natives & The Land

by the

FEDERAL FIELD COMMITTEE
FOR DEVELOPMENT PLANNING IN ALASKA

From all authoritative sources

50 0 50 MILES

FIGURE V - 46

Bristol Bay Region

More than 2,700 Alaska Natives live in 17 villages in the Bristol Bay Region. They represent 7 percent of the rural Alaska Native population and 6.6 percent of the total Native population. Approximately 700 live in Dillingham, a second class city, and another 350 in the villages of Naknek and South Naknek, also incorporated as second class cities, in the Bristol Bay Borough. The region includes 17 million acres, 4.5 percent of the area of the state.

Most of the land remains in the public domain.

There are no withdrawals for Native use in the area, and total known Native ownership of land is 23.33 acres in six restricted allotments. Eight of the villages have been surveyed, and Bureau of Land Management records indicate that deeds have been issued in Naknek and Dillingham. However, the Bureau of Indian Affairs has no record of any restricted-title townsite lots issued to Alaska Natives in the region.

Except for the villages of Aleknagik and Egegik, most village sites are unaffected by the 2 million acres of state-selected land in the Wood River-Tikchik area and near Egegik. Nor are they affected by the more than 1.3 million-acre portion of the Katmai National Monument, which extends into this region. Conflict on the *use* of the land, however, will depend upon the management and disposal policies of the state as they affect subsistence use by Alaska Natives. Lands in the Aleknagik area have only been selected by the state and neither patented nor tentatively approved for patent, and the protest of the Aleknagik Natives to 59,000 acres in the area is pending. Other protests have been filed by Nondalton-Lime Hills as well as Kodiak, Bristol Bay, and Alaska Peninsula Association affecting the lands of this region.

7 villages in the
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The region includes
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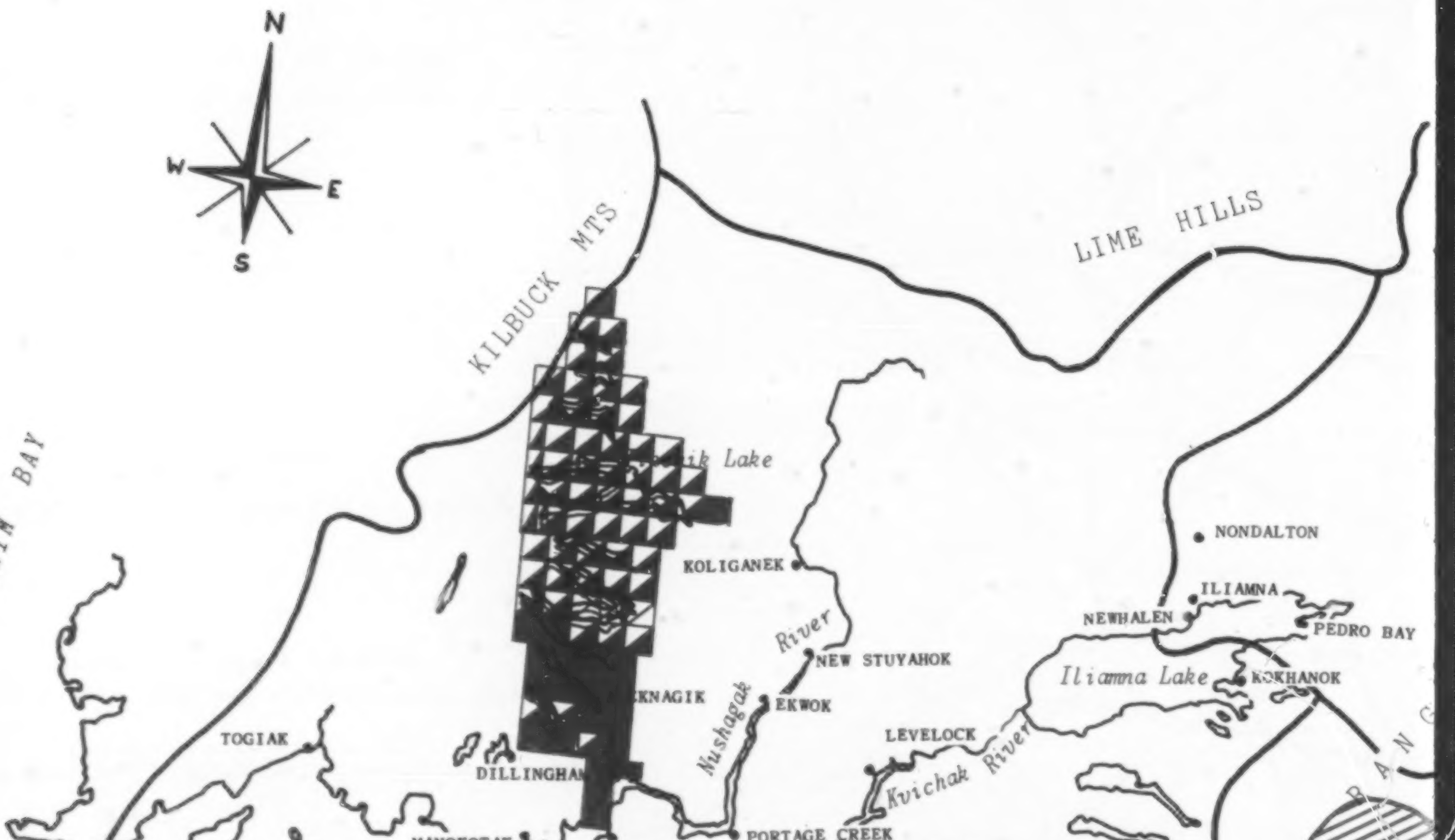
Egegik, most
s of state-selected
k. Nor are they
of the Katmai
Conflict on the
agement and dis--
ence use by Alaska
en selected by the
d for patent, and
es in the area is
ton-Lime Hills as
Association

FIGURE V-47

CURRENT LAND STATUS, BRISTOL BAY REGION

Total Area		17,000,000 acres
Withdrawals		1,398,000 acres
Katmai N.M.	1,398,000 acres	
State Selections		2,010,000 acres
Selected Only	375,000 acres	
Tentatively Approved	1,625,000 acres	
Patented	10,000 acres	
Other Patented or Claimed Lands		
Patented	10,000 acres	
Claimed/Entered	25,000 acres	
Mineral leasing		
5 small, 1 large area - federal oil and gas leases		
Mineral locations		
5 areas - gold placer 3 areas - known production 8 areas - probable locations		
Petitions under Act of May 1, 1936:		
Within region:	Kokhanok, Newhalen, Nondalton, So. Naknek	
Partially within region:	Kwethlok, Quinhagok, Goodnews Bay, Sleetmute, Akiak, Ekwok (not platted).	
Native Protests:		
Within region		
A-056255, Aleknagik Natives, 59,000 acres AA-699 (F-440), Nondalton-Lime Hills Natives, 20,028,600, see also Cook Inlet and Kuskokwim regions AA-872, Kodiak, Bristol Bay, and Alaska Peninsula Native Association, 53,719,300 acres, see also Kodiak region		
Overlap from adjacent region		
AA-373 (F-108), Bethel Villages - see Y-K Delta region		
Public Domain - Estimate		13,500,000 acres

Source: U. S. Department of Interior, Bureau of Land Management, Division of Lands and Minerals, Anchorage, Alaska.



N
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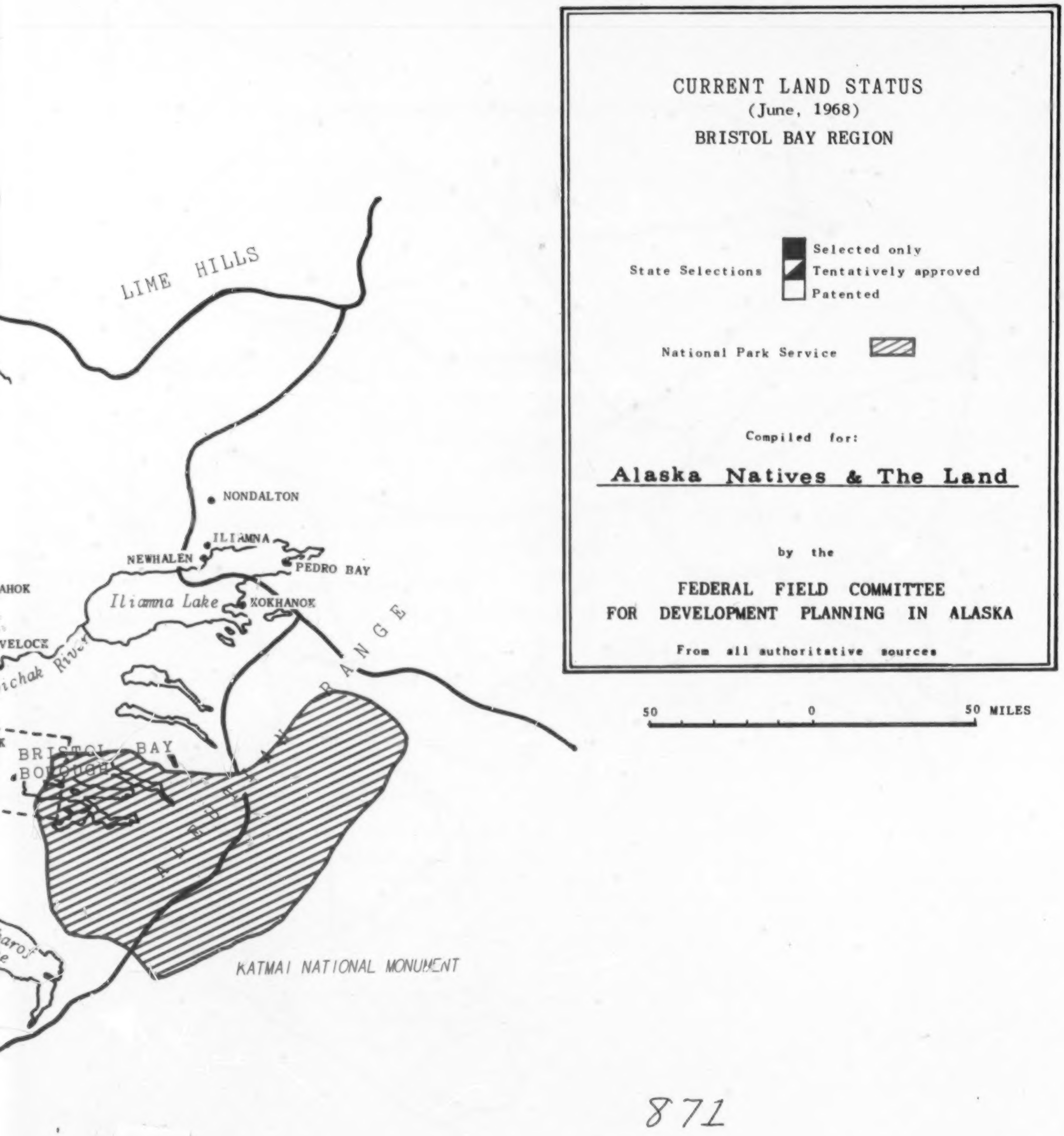
KILBUCK MTS
LIME HILLS
KUSKOKWIM BAY
ik Lake
KOLIGANEK
NONDALTON
ILIAMNA
NEWHALEN
PEDRO BAY
River
NEW STUYAHOK
Iliamna Lake
KOKHANOK
KNAGIK
Nushagak
EKWOK
TOGIAK
LEVELOCK
DILLINGHA
Kvichak River
RANG
MANOKOTAK
CLARKS POINT
PORTAGE CREEK
NAKNEK
BRISTOL BAY
BOROUGH
SOUTH NAKNEK
BRISTOL BAY
EGIK
Becharof Lake
KATMAI NATIONAL
PILOT POINT

FIGURE V - 48


LIME HILLS
NONDALTON
ILIAMNA
NEWHALEN
PEDRO BAY
AHOK
Iliamna Lake
KOKHANOK
VELOCK
ichak River
ALEUTIAN RANGE
BRISTOL BAY BOROUGH
KATMAI NATIONAL MONUMENT
State Selections
■ Selected only
◪ Tentatively approved
☐ Patented
National Park Service ▨
50
0
50 MILES

CURRENT LAND STATUS
(June, 1968)
BRISTOL BAY REGION

Compiled for:

Alaska Natives & The Land

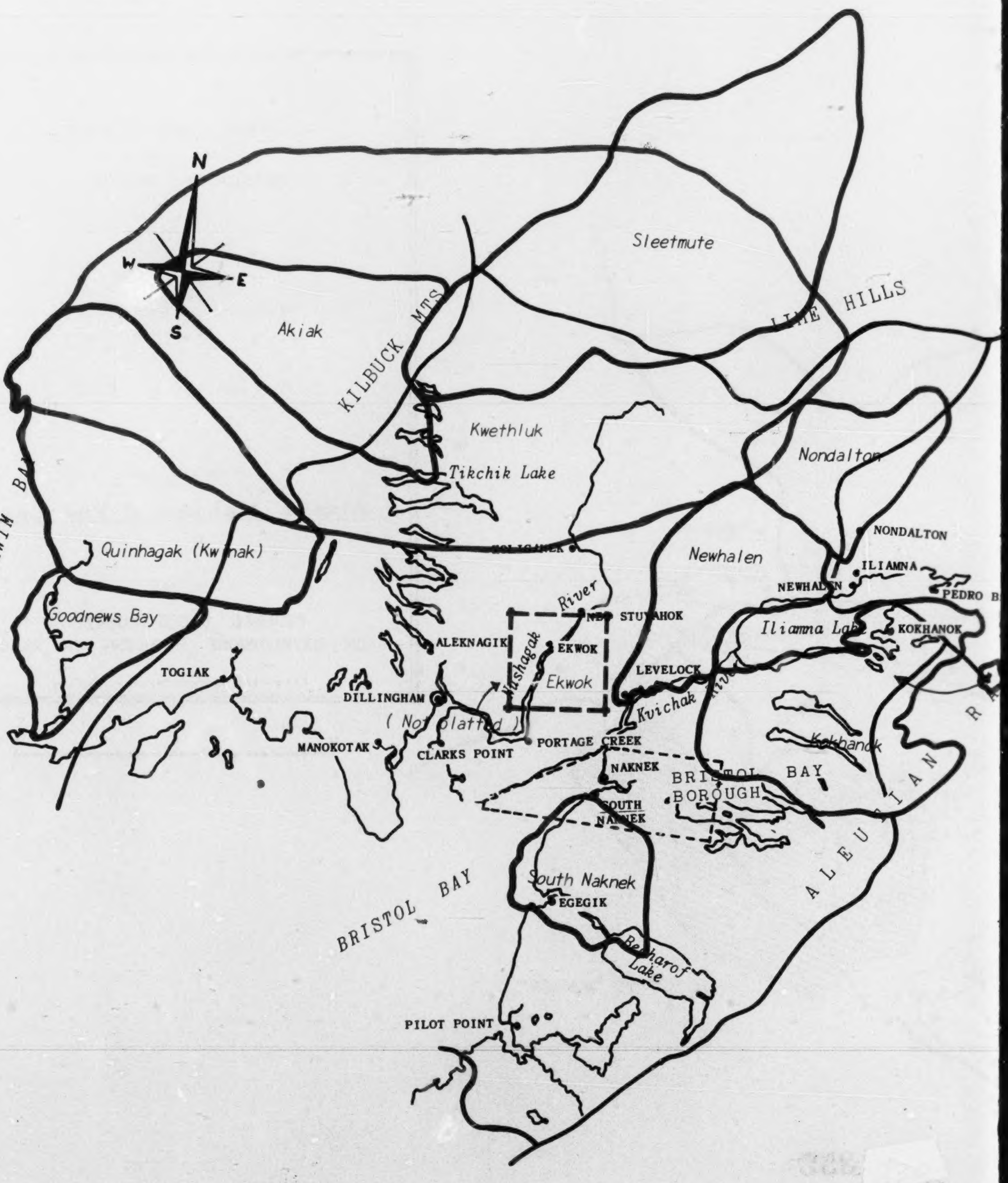
by the

FEDERAL FIELD COMMITTEE
FOR DEVELOPMENT PLANNING IN ALASKA

From all authoritative sources

FIGURE V – 48

7


N
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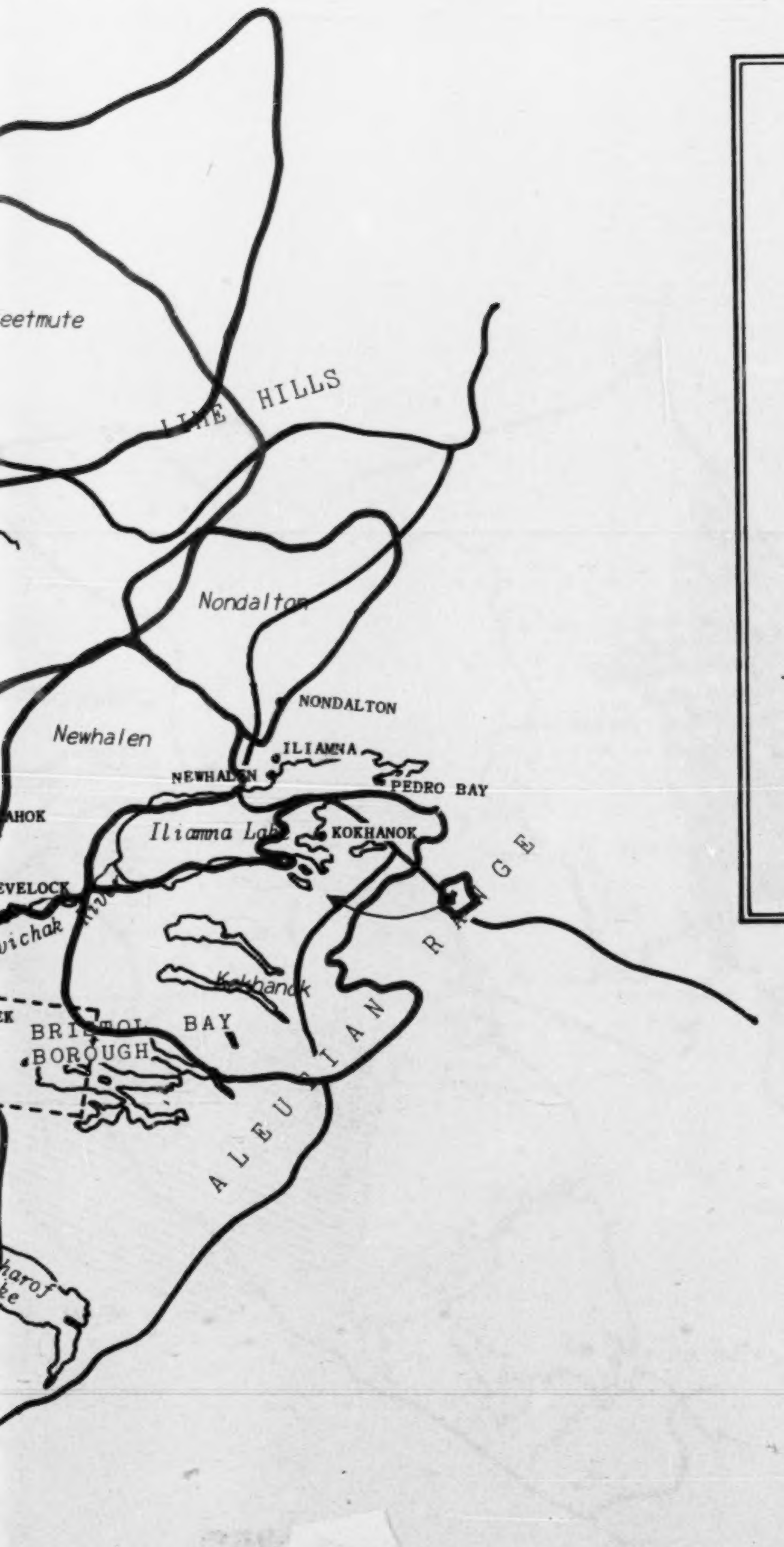
E
S
Sleetmute
LIME HILLS
Akiak
KILBUCK MTS
Kwethluk
Tikchik Lake
Nondalton
KUSKOKWIM BAY
Quinhagak (Kwinak)
KOLIGANEK
Newhalen
NONDALTON
ILIAMNA
NEWHALEN
PEDRO B
Goodnews Bay
River
NEW STUYAHOK
Iliamna Lake
KOKHANOK
ALEKNAGIK
EKWOK
TOGIAK
Nushagak
Ekwok
LEVELOCK
DILLINGHAM
Kvichak River
(Not platted)
MANOKOTAK
PORTAGE CREEK
CLARKS POINT
Kokhanok
NAKNEK
BRISTOL BAY BOROUGH
SOUTH NAKNEK
ALEUTIAN RA
BRISTOL BAY
South Naknek
EGEGIK
Becharof Lake
PILOT POINT

FIGURE V - 49

14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Nondalton
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ILIAMNA
NEWHALEN
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Kokhanok
BRISTOL BAY BOROUGH
ALEUTIAN RANGE
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ke

ALASKA NATIVE PETITIONS
UNDER ACT OF MAY 1, 1936

BRISTOL BAY

Compiled for:

Alaska Natives & The Land

by the

FEDERAL FIELD COMMITTEE
FOR DEVELOPMENT PLANNING IN ALASKA

From all authoritative sources

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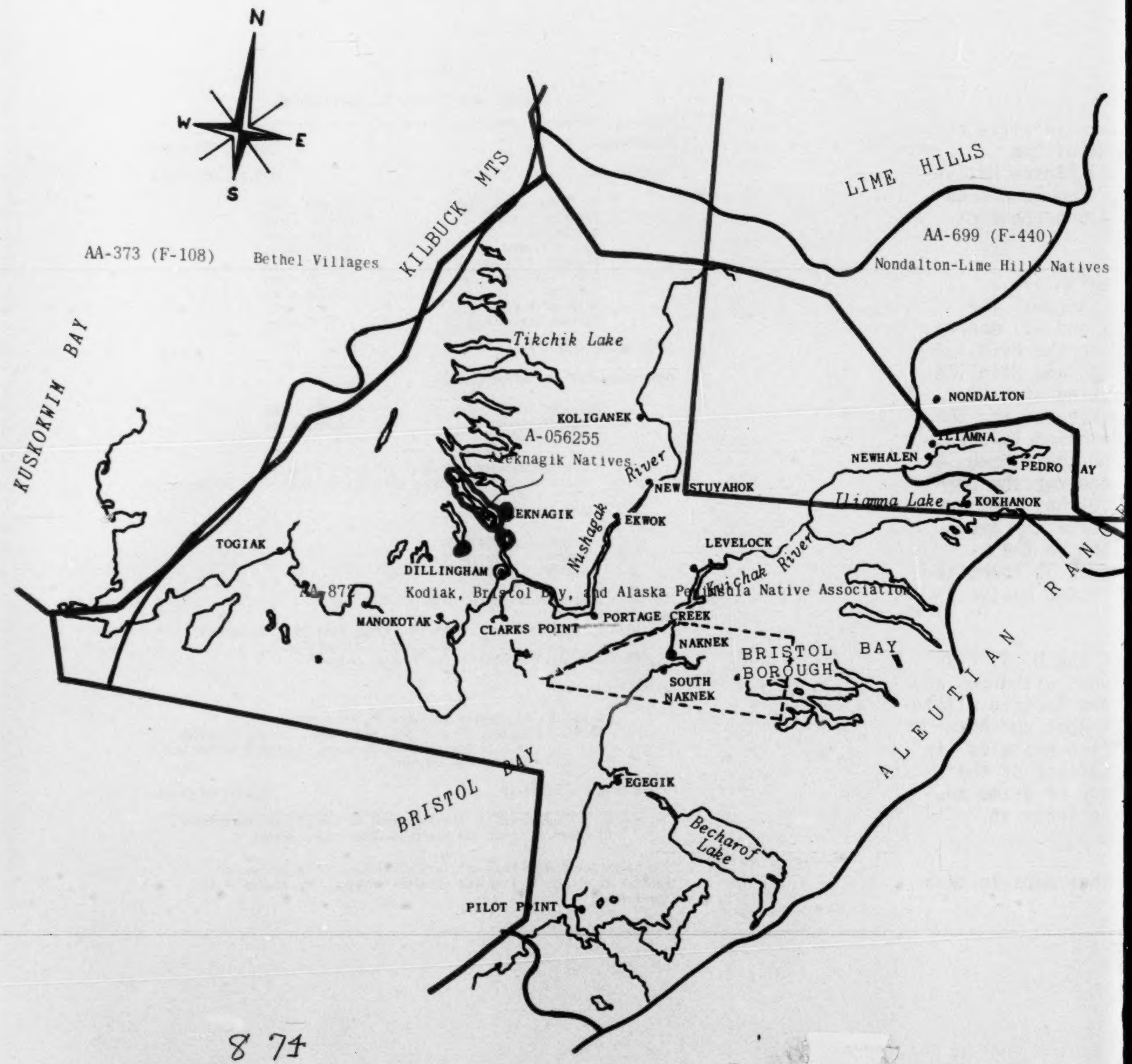
FIGURE V - 49


N
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E
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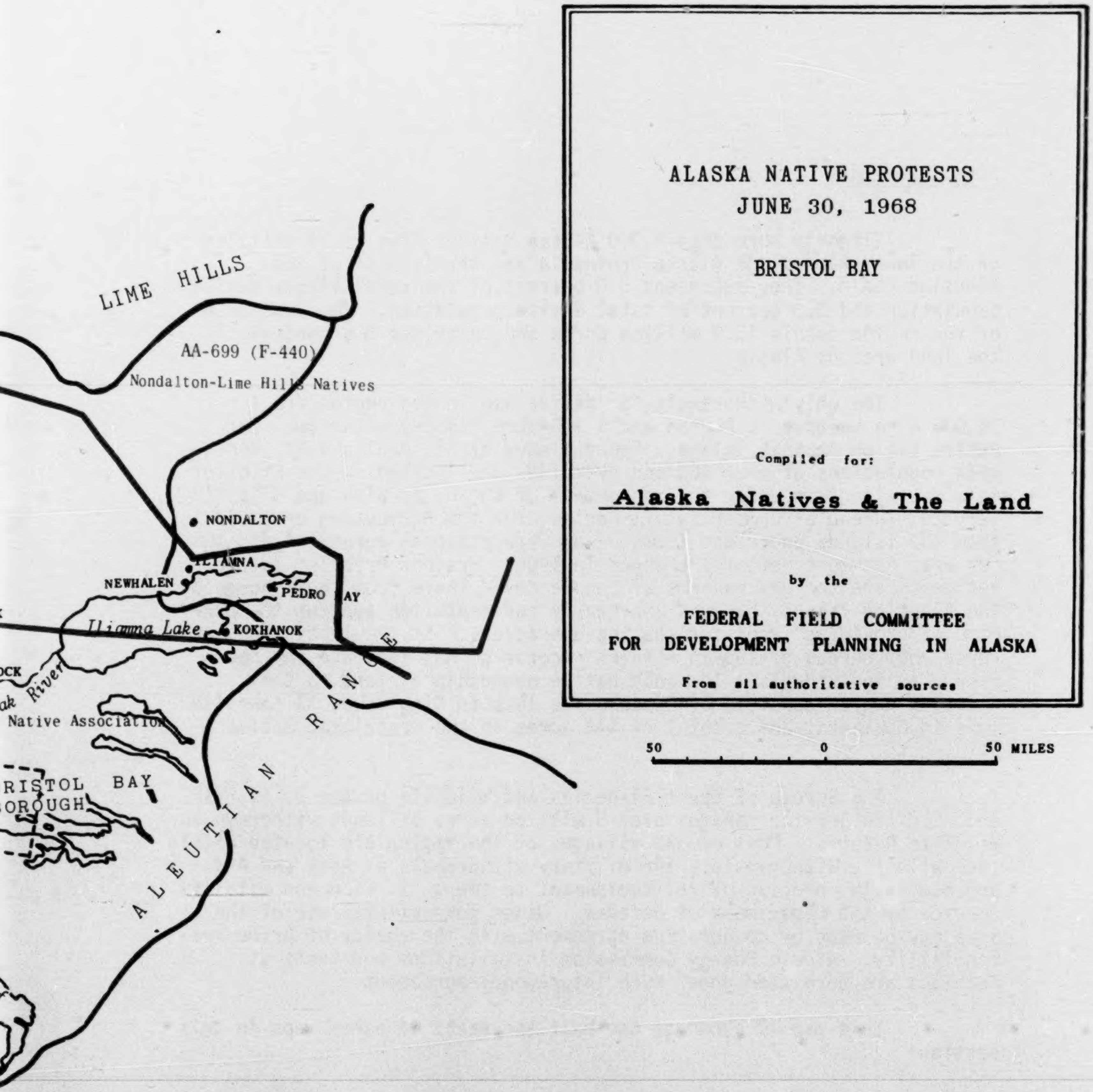
LIME HILLS
KILBUCK MTS
AA-373 (F-108)
Bethel Villages
AA-699 (F-440)
Nondalton-Lime Hills Natives
KUSKOKWIM BAY
Tikchik Lake
KOLIGANEK
A-056255
Aleknagik Natives
NONDALTON
ILIAMNA
NEWHALEN
PEDRO BAY
Nushagak River
NEW STUYAHOK
EKWOK
ALEKNAGIK
Iliamna Lake
KOKHANOK
TOGIAK
LEVELOCK
Kvichak River
DILLINGHAM
AA-872
Kodiak, Bristol Bay, and Alaska Peninsula Native Association
MANOKOTAK
CLARKS POINT
PORTAGE CREEK
NAKNEK
BRISTOL BAY BOROUGH
SOUTH NAKNEK
ALEUTIAN RANG
BRISTOL BAY
EGEGIK
Becharof Lake
PILOT POINT

8 74

FIGURE V - 50


LIME HILLS
AA-699 (F-440)
Nondalton-Lime Hills Natives
NONDALTON
ILIAMNA
NEWHALEN
PEDRO BAY
Iliamna Lake
KOKHANOK
OCK
ak River
Native Association
RISTOL BAY
OROUGH
ALEUTIAN RANGE
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ALASKA NATIVE PROTESTS
JUNE 30, 1968

BRISTOL BAY

Compiled for:

Alaska Natives & The Land

by the

FEDERAL FIELD COMMITTEE
FOR DEVELOPMENT PLANNING IN ALASKA

From all authoritative sources

FIGURE V - 50

Aleutian Region

Slightly more than 1,900 Alaska Natives live in 14 villages on the lower tip of the Alaska Peninsula and the islands of the Aleutian Chain. They represent 5.8 percent of the rural Alaska Native population and 3.5 percent of total Native population. The land area of the region totals 13.9 million acres and comprises 3.6 percent of the land area of Alaska.

The only withdrawals for Native use in the region are a 72,000-acre reserve at Akutan and a 110-acre fishery withdrawal for Native use on Amaknak Island. The villages of St. Paul and St. George, with populations of over 400 and over 170, are located on the Pribilof Islands, withdrawn under the management of the U. S. Fish and Wildlife Service, Bureau of Commercial Fisheries, for the harvesting of seals from the islands under the terms of an international agreement and the Fur Seal Act most recently amended in 1966. Present Pribilof Island residents are the descendents of people moved there from their homes on the Aleutian Islands by Russians nearly two centuries ago for the purpose of providing labor for sealing operations. St. Paul has been surveyed, but Bureau of Indian Affairs records do not indicate any deeds issued to individuals. The only Native ownership of land in the Aleutian Region consists of 34 townsite lots in King Cove, 33 townsite lots in Unalaska, and a total of 148 acres in two restricted Native allotments.

The Bureau of Sport Fisheries and Wildlife of the U. S. Fish and Wildlife Service manages over 3 million acres of lands withdrawn as Wildlife Refuges. Most of the villages of the region are located within such wildlife withdrawals. The military withdrawals at Adak and Attu are now in the process of relinquishment to the U. S. Fish and Wildlife Service by the Department of Defense. Other governmental use of the area may be made by cooperative agreement with the agency of prime responsibility. Atomic Energy Commission installations and tests at Amchitka are permitted under such interagency agreement.

This map is shown at one-half the scale of other maps in this section.

886

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The land area
3.6 percent of

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on the Pribilof
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sting of seals
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ribilof Island
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Fish and Wildlife
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ther maps in this

FIGURE V - 51

CURRENT LAND STATUS, ALEUTIAN REGION

Total Area		13,900,000 acres
Withdrawals		3,268,000 acres
Aleutian Island N.W.R.	2,720,000 acres	
Izenbeck N.W.R.	415,000 acres	
Akutan N.R.	72,000 acres	
Adak Military	(61,000)acres	
Pribolof Reserve	50,000 acres	
Attu Military*	(12,000)acres	
Simeonof N.W.R.	10,500 acres	
Bogoslof N.W.R.	500 acres	
Amaknak Island N.R.	(110)acres	
State Selections - none		0 acres
Other Patented or Claimed Lands		
Patented	5,000 acres	
Claimed/Entered	10,000 acres	
Mineral leasing		

One medium area - federal oil and gas leases
State oil and gas leases offshore on north side of Peninsula

Mineral locations

1 area - placer gold
2 areas - known production
4 areas - probable locations

Petitions under Act of May 1, 1936:

Within region:	Akutan, Atka, King Cove, Belkofski, Nikolski, (unidentified)
Partially within region:	Perryville, Chignik

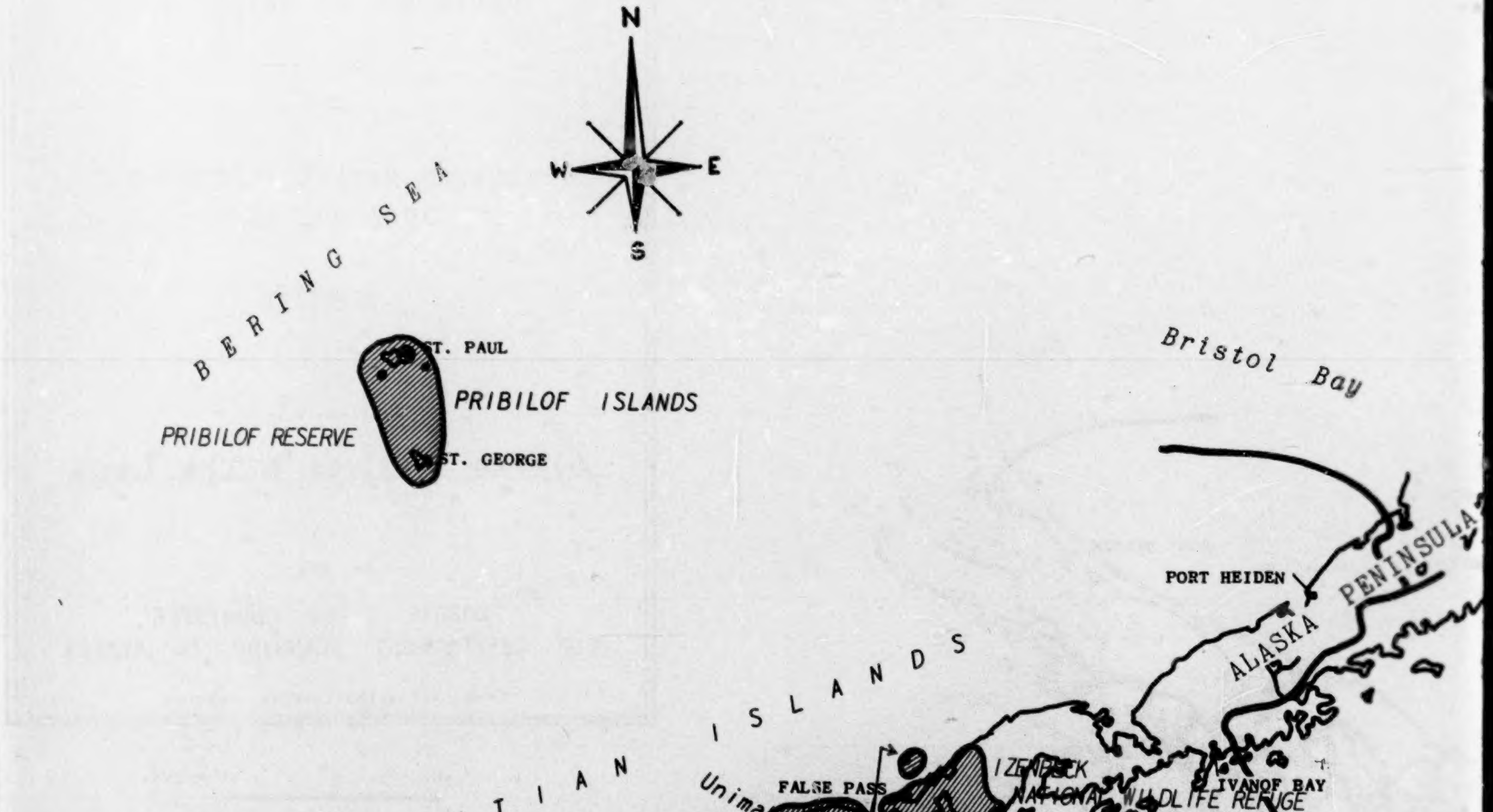
Native Protests:

A-067702, St. George Village, 58,000 acres
AA-872 , Kodiak, Bristol Bay, and Alaska Peninsula Native Association, 53,719,300 acres, see also Kodiak and Bristol Bay regions

Public Domain - Estimate	10,600,000 acres

Source: U. S. Department of the Interior, Bureau of Land Management, Division of Lands and Minerals, Anchorage, Alaska.

*The major portion of this military withdrawal is in process of transfer to the U. S. Fish and Wildlife Service, Department of the Interior


N
W
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BERING SEA
ST. PAUL
PRIBILOF ISLANDS
PRIBILOF RESERVE
ST. GEORGE
Bristol Bay
ALASKA PENINSULA
PORT HEIDEN
ALEUTIAN ISLANDS
IZEMBEK NATIONAL WILDLIFE REFUGE
IVANOF BAY
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AKUTAN NATIVE RESERVE
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KING COVE
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Umnak Is.
PAULOFF HARBOR
Shumagin Islands
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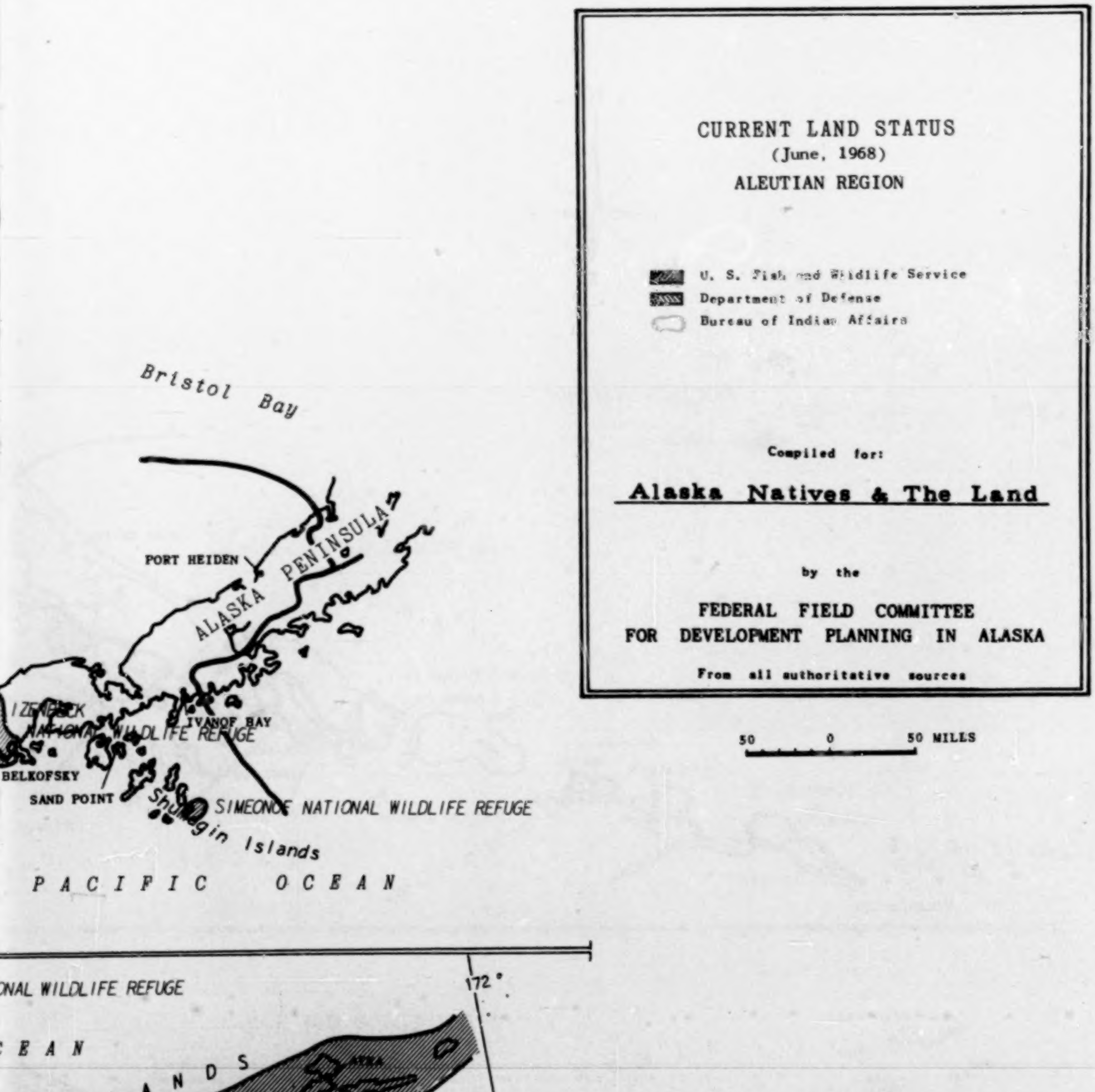
Unalaska Is.
NIKOLSKI
Islands of the four Mountains
PACIFIC OCEAN
ALEUTIAN ISLANDS NATIONAL WILDLIFE REFUGE
Attu Is.
PACIFIC OCEAN
ALEUTIAN ISLANDS
NEAR ISLANDS
Kiska Is.
RAT ISLANDS
Tanaga Is.
ATKA
Atka Is.
Adak Is.
ANDREANOF ISLANDS
Amchitka Is.

FIGURE V - 52


CURRENT LAND STATUS
(June, 1968)
ALEUTIAN REGION
U. S. Fish and Wildlife Service
Department of Defense
Bureau of Indian Affairs
Compiled for:
Alaska Natives & The Land
by the
FEDERAL FIELD COMMITTEE
FOR DEVELOPMENT PLANNING IN ALASKA
From all authoritative sources
50 0 50 MILES
Bristol Bay
PORT HEIDEN
ALASKA PENINSULA
IZEMBEK NATIONAL WILDLIFE REFUGE
IVANOF BAY
BELKOFSKY
SAND POINT
SIMEONOF NATIONAL WILDLIFE REFUGE
Shumagin Islands
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ONAL WILDLIFE REFUGE
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ATKA
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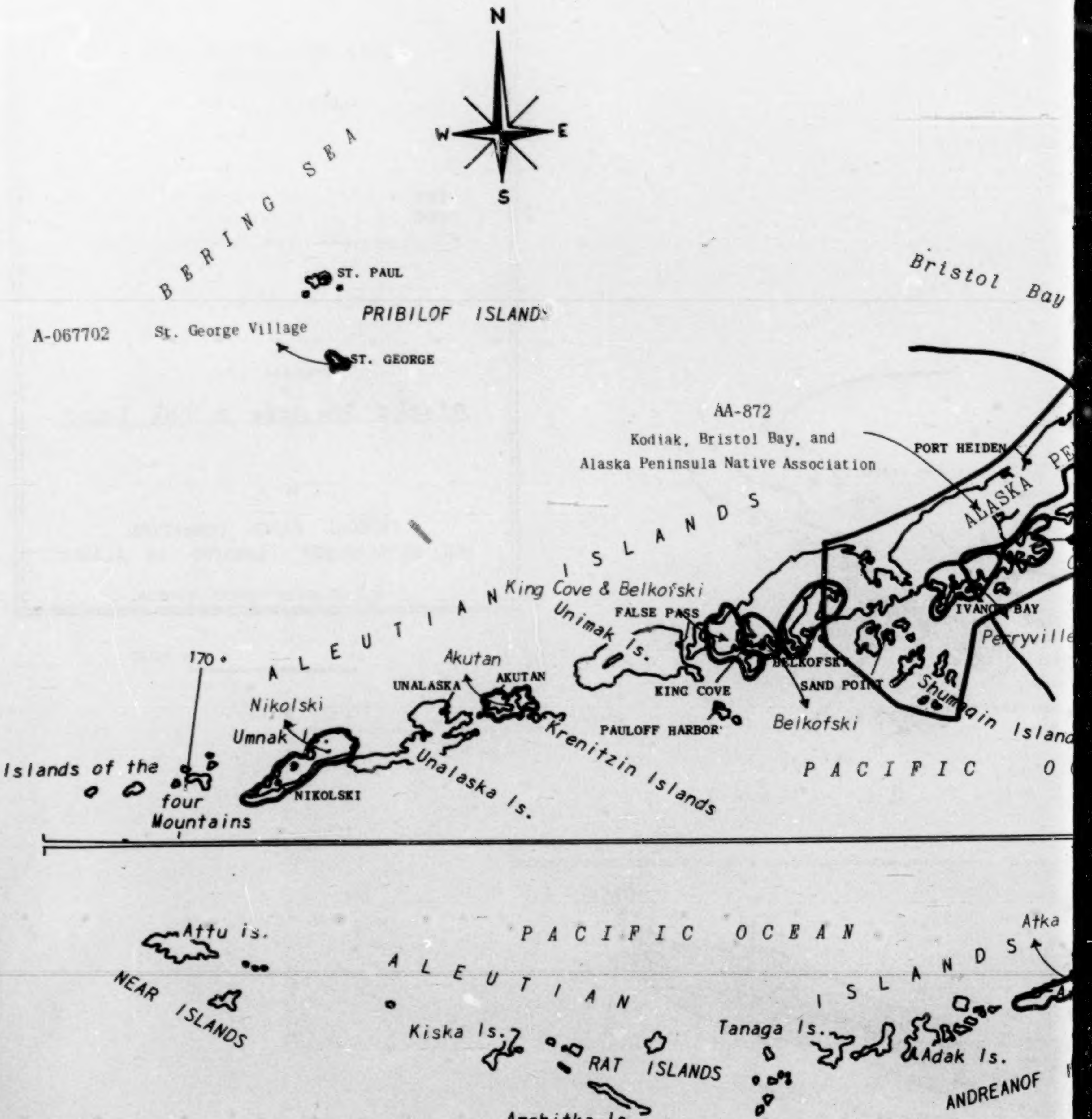
ANDREANOF ISLANDS

FIGURE V – 52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ST. PAUL
PRIBILOF ISLANDS
A-067702
St. George Village
ST. GEORGE
Bristol Bay
AA-872
Kodiak, Bristol Bay, and
Alaska Peninsula Native Association
PORT HEIDEN
ALASKA
ALEUTIAN ISLANDS
King Cove & Belkofski
Unimak Is.
FALSE PASS
IVANOF BAY
Perryville
170°
Akutan
UNALASKA
AKUTAN
BELKOFSKI
SAND POINT
KING COVE
Shumagin Islands
Nikolski
Umnak I.
PAULOFF HARBOR
Belkofski
Krenitzin Islands
Islands of the four Mountains
Unalaska Is.
NIKOLSKI
PACIFIC O
Attu is.
PACIFIC OCEAN
Atka
NEAR ISLANDS
ALEUTIAN ISLANDS
Kiska Is.
Tanaga Is.
Adak Is.
RAT ISLANDS
ANDREANOF
Amchitka Is.

FIGURE V – 53

ALASKA NATIVE PETITIONS
UNDER ACT OF MAY 1, 1936

and

ALASKA NATIVE PROTESTS
JUNE 30, 1968

ALEUTIAN

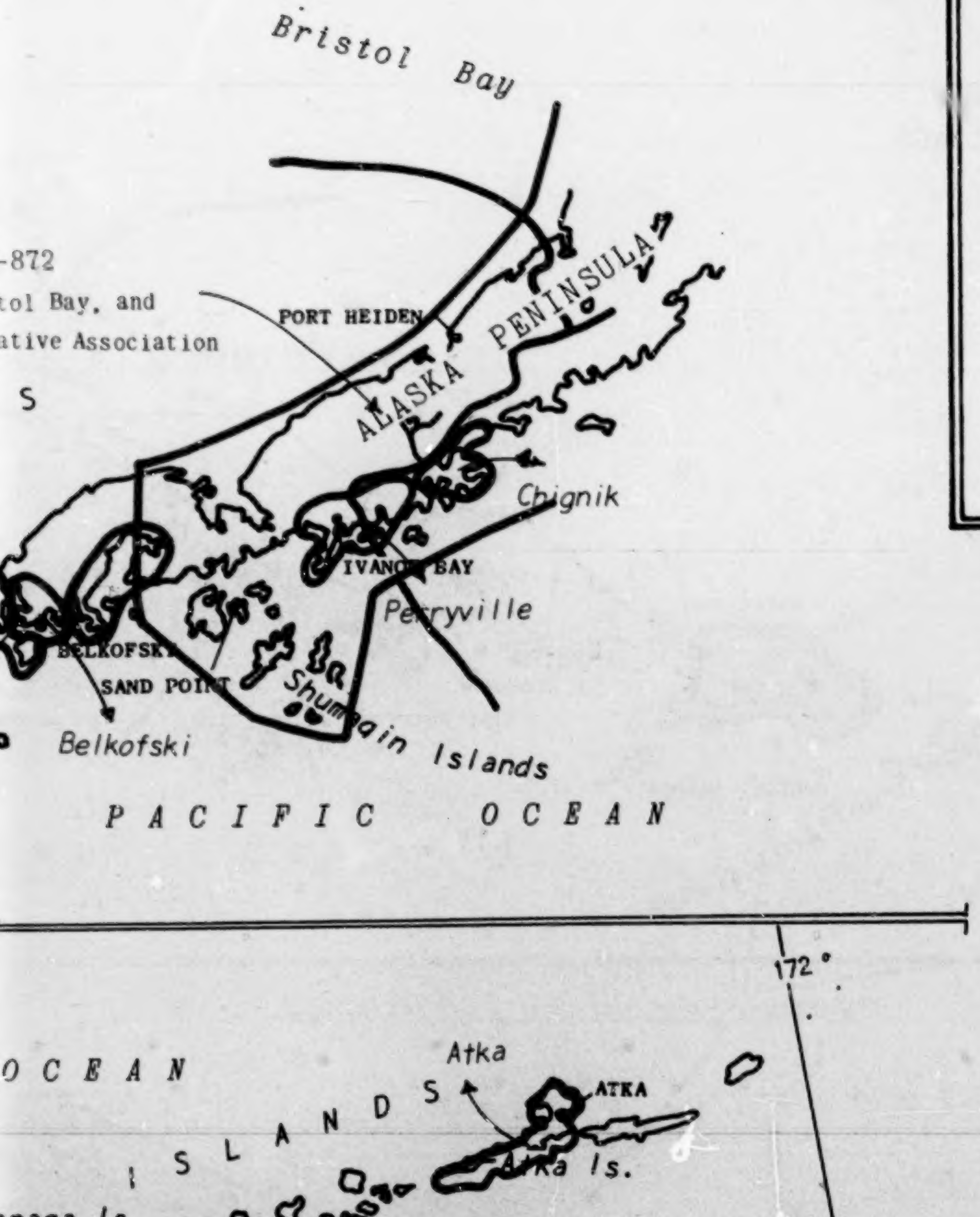
Compiled for:

Alaska Natives & The Land

by the

**FEDERAL FIELD COMMITTEE
FOR DEVELOPMENT PLANNING IN ALASKA**

From all authoritative sources


Bristol Bay
-872
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S
PORT HEIDEN
ALASKA PENINSULA
Chignik
IVANOF BAY
Perryville
BELKOFSKI
SAND POINT
Belkofski
Shumagin Islands
PACIFIC OCEAN
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ISLANDS
Atka
ATKA
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anaga Is.
Adak Is.
ANDREANOF ISLANDS
50 0 50 MILES

FIGURE V - 53

891

Kodiak Region

Nearly 1,400 Alaska Natives live in ten villages in the Kodiak Region, which covers 8.5 million acres, 2 percent of the state. They represent 3.7 percent of rural Native population and 2.7 percent of the total Native population. Other Alaska Natives live in villages and cities which are predominantly Native. Old Harbor and Ouzinkie have populations of between 200 and 250 each; and although both they and Larsen Bay have been surveyed, no deeds to townsite lots have been issued except for nine lots issued in the City of Kodiak. Two restricted allotments, totaling 37 acres, complete the known individually owned Native lands.

Carved out of the Kodiak National Wildlife Refuge is a 35,200-acre withdrawal for the village of Karluk, as well as exceptions of one mile square for village sites for each of the villages of Old Harbor, Akhiok, Larsen Bay, Ugashik, Uyak, Alitak, Ayakulik, and Kaguyak. Resident populations remain at Old Harbor, Akhiok, and Larsen Bay. Although use may be made of the other sites by Natives of the region, present records do not show a resident population of more than 25 for any other villages mentioned.

Less than half of the region remains in the public domain after federal withdrawals and state-selected lands are deducted. No remaining public domain lands are on Kodiak Island. A large part of Katmai National Monument covers water areas now owned by the state. Of the more than 1 million acres selected by the state, only 60,000 acres have been patented, although an additional 820,000 acres have been tentatively approved for patent.

Many of the Native villages filed petitions nearly twenty years ago asking for a determination of their possessory rights or the establishment of reserves under the Indian Reorganization Act. In addition, the entire region is blanketed by the present protest of the Kodiak, Bristol Bay, and Alaska Peninsula Native Associations covering more than 50 million acres.

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FIGURE V-54

CURRENT LAND STATUS, KODIAK REGION

Total Area		8,500,000 acres
Withdrawals		3,658,500 acres
Kodiak Bear Refuge	1,815,000 acres	
Katmai N.M.	1,300,000 acres	
Chugach N.F.	500,000 acres	
Karluk N.R.	35,000 acres	
Semidi N.W.R.	8,500 acres	
State Selections		1,010,000 acres
Selected Only	130,000 acres	
Tentatively Approved	820,000 acres	
Patented	60,000 acres	
Other Patented or Claimed Lands		
Patented	10,000 acres	
Claimed/Entered	5,000 acres	
Mineral Leasing		

Four small areas - federal oil and gas leases
Two small areas - state oil and gas leases

Mineral locations

7 areas - gold placer
7 areas - known production
12 areas - probable locations

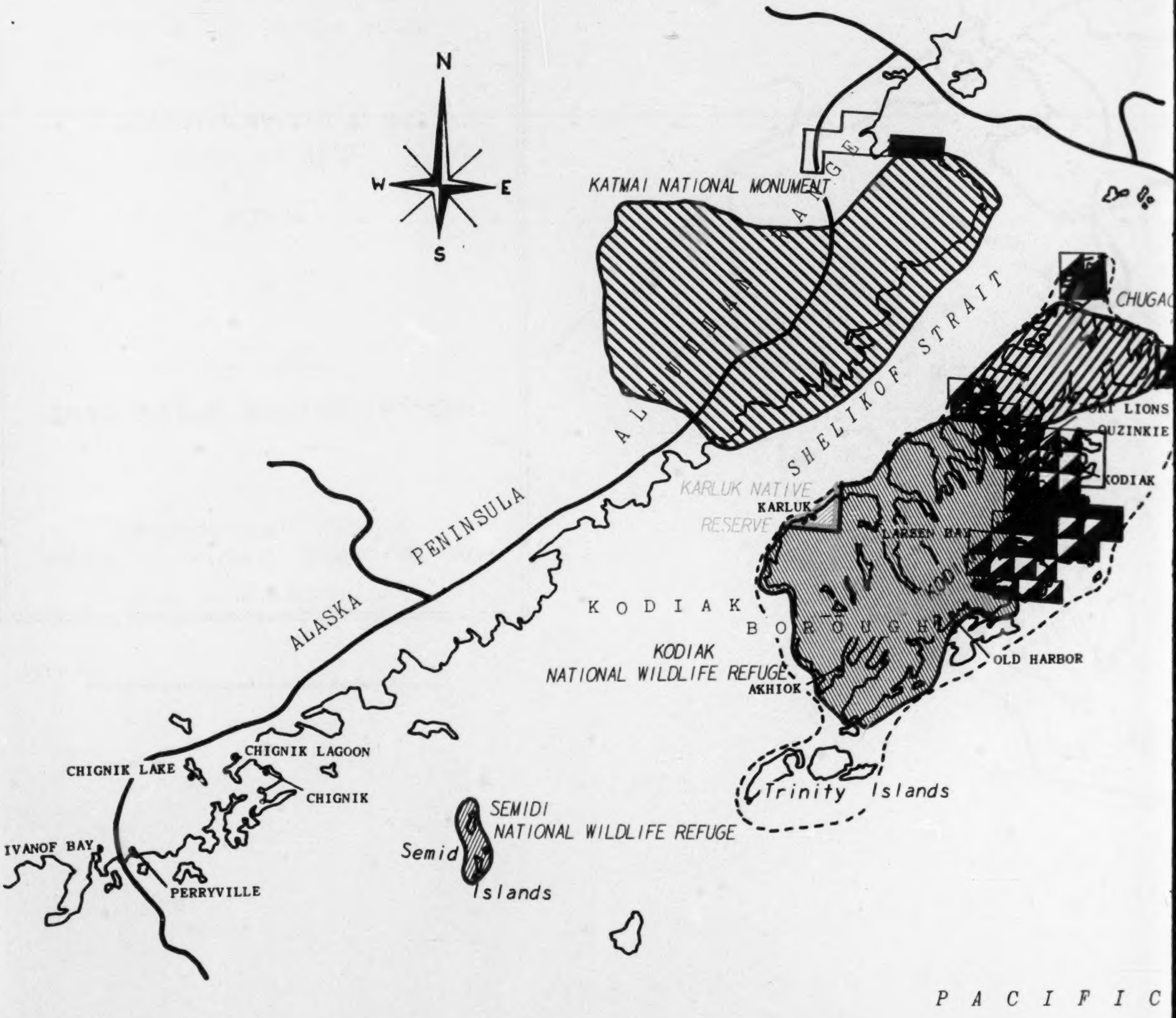
Petitions under Act of May 1, 1936:
Within region: Akhiok (Alitak), Koguyak (village moved), Chignik, Karluk, Old Harbor, Ouzinkie
Partially within region: Perryville, Kokhanok

Native Protests:

All region - AA-872, Kodiak, Bristol Bay, and Alaska Peninsula Native Associations, 53,719,300 acres. See also Bristol Bay region

Public Domain - Estimate	3,800,000 acres

Source: U. S. Department of Interior, Bureau of Land Management, Division of Lands and Minerals, Anchorage, Alaska.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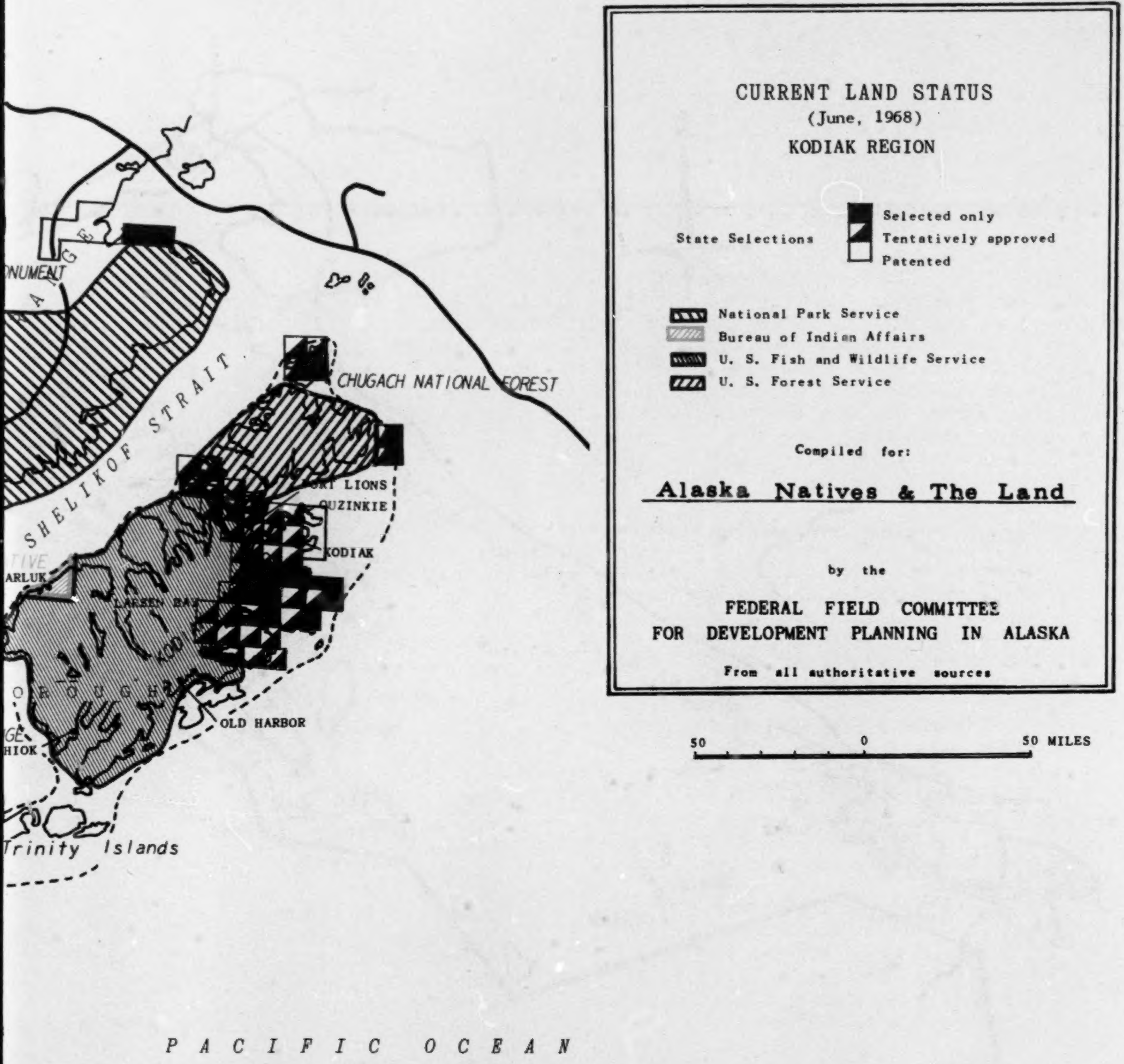
KATMAI NATIONAL MONUMENT
ALEUTIAN RANGE
SHELIKOF STRAIT
CHUGAC
PORT LIONS
OUZINKIE
KODIAK
KARLUK NATIVE RESERVE
KARLUK
LARSEN BAY
ALASKA PENINSULA
KODIAK BOROUGH
KODIAK NATIONAL WILDLIFE REFUGE
OLD HARBOR
AKHIOK
CHIGNIK LAGOON
CHIGNIK LAKE
CHIGNIK
Trinity Islands
SEMIDI NATIONAL WILDLIFE REFUGE
Semidi Islands
IVANOF BAY
PERRYVILLE
PACIFIC

894

FIGURE V - 55



CURRENT LAND STATUS
(June, 1968)
KODIAK REGION

Compiled for:

Alaska Natives & The Land

by the

FEDERAL FIELD COMMITTEE
FOR DEVELOPMENT PLANNING IN ALASKA

From all authoritative sources

State Selections
Selected only
Tentatively approved
Patented
National Park Service
Bureau of Indian Affairs
U. S. Fish and Wildlife Service
U. S. Forest Service
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LARSEN BAY
KODI
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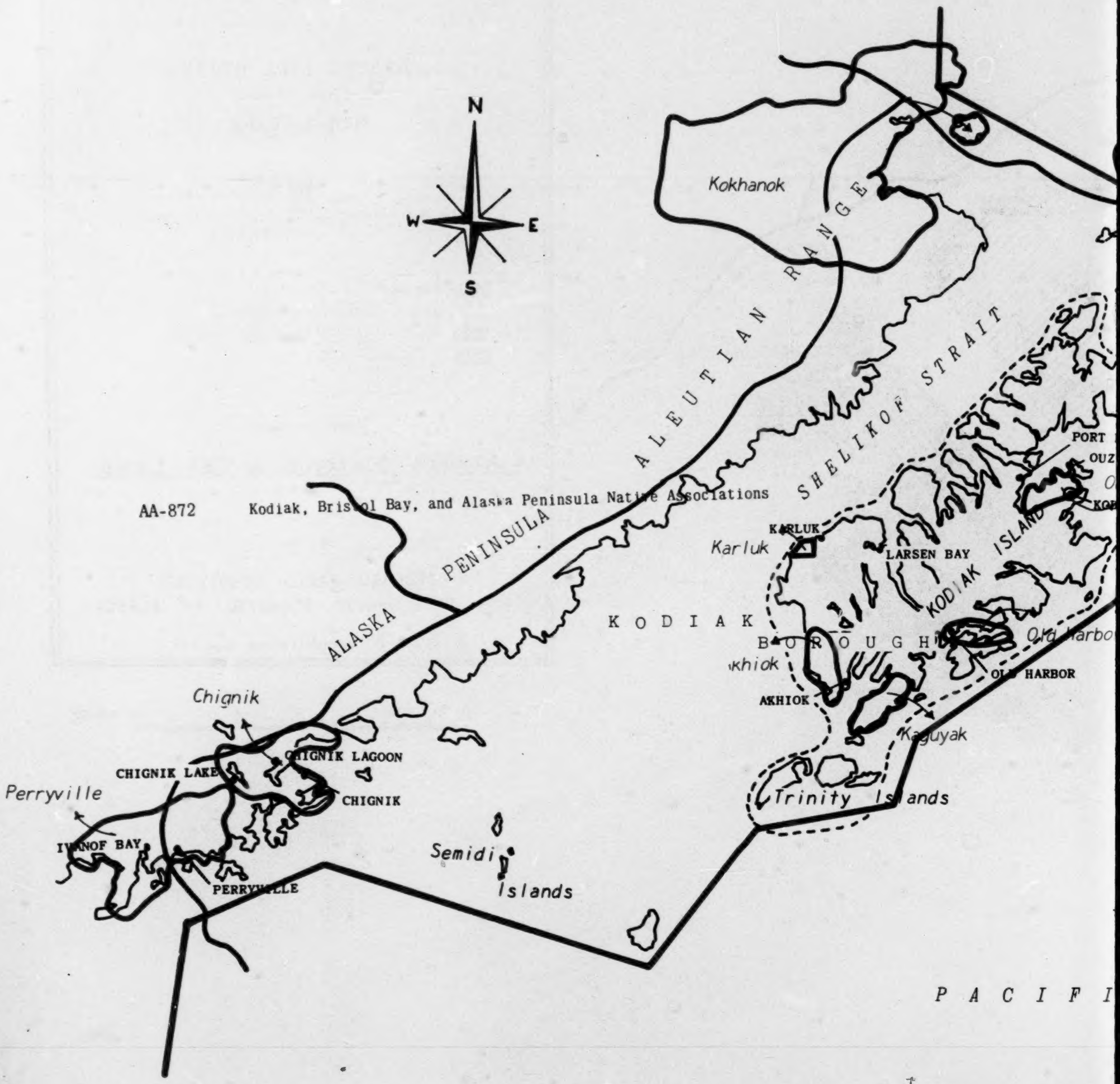
Trinity Islands
PACIFIC OCEAN

FIGURE V – 55

AA-872 Kodiak, Bristol Bay, and Alaska Peninsula Native Associations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ALEUTIAN RANGE
ALASKA PENINSULA
SHELIKOF STRAIT
KARLUK
Karluk
LARSEN BAY
KODIAK ISLAND
PORT
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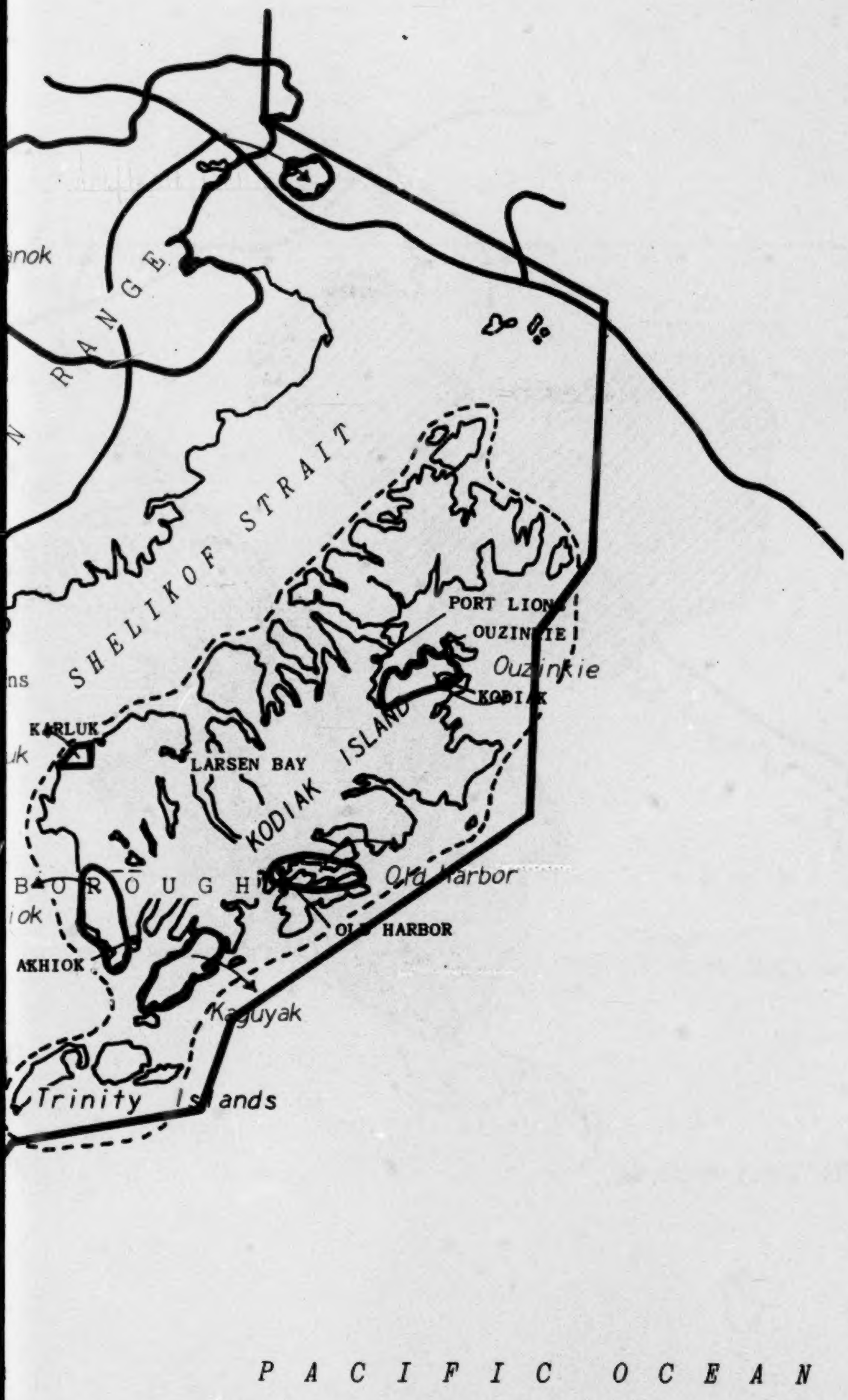
KODIAK BOROUGH
Old Harbor
OLD HARBOR
Akhiok
AKHIOK
Kaguyak
Trinity Islands
Chignik
CHIGNIK LAGOON
CHIGNIK LAKE
CHIGNIK
Perryville
IVANOF BAY
PERRYVILLE
Semidi Islands
PACIFI

896

FIGURE V - 56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PORT LIONS
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Old Harbor
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Trinity Islands
PACIFIC OCEAN
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ALASKA NATIVE PETITIONS
UNDER ACT OF MAY 1, 1936

and

ALASKA NATIVE PROTESTS
JUNE 30, 1968

KODIAK

Compiled for:

Alaska Natives & The Land

by the

FEDERAL FIELD COMMITTEE
FOR DEVELOPMENT PLANNING IN ALASKA

From all authoritative sources

FIGURE V - 56

Cook Inlet Region

It is estimated that approximately 150,000 people live in the Cook Inlet Region; and of the total, nearly 6,000 are Alaska Natives. Only some 500 of them live in rural Native villages--the largest is the village of Tyonek on the western shoreof Cook Inlet, whose population exceeds 200. The other Alaska Natives in the region live in non-Native places; an estimated more than 4,500 live in the Greater Anchorage Area Borough.

Native-owned lands are difficult to ascertain with accuracy. However, the Natives at Tyonek live on a 26,918-acre reserve established by executive order, and those at Eklutna on a 1,900-acre withdrawal. These lands and an additional 3,000 acres in 29 individual allotments and 3 restricted townsite lots in the City of Kenai are the only known Native-owned lands in the Cook Inlet Region.

This most heavily populated area of Alaska still has 9,600,000 acres of land remaining in the public domain--most of it on the largely inaccessible western side of Cook Inlet, in more remote areas of the Matanuska-Susitna Borough, or along the crest of the Chugach Mountain range.

Six predominantly Native villages are in the area: Cantwell, Eklutna, Newhalen, Nondalton, Pedro Bay, and Tyonek.

Nearly half of the state's selections and a major portion of the lands patented to the state are in this 17,500,000-acre region of the state, which comprises only 4.6 percent of the total area of Alaska. Thus far, withdrawals remaining under the control of the federal government are less than half of the area now under the jurisdiction of the state. The largest federal withdrawal is the Kenai National Moose Range, followed by a portion of the Chugach National Forest in the area and the military installations of Elmendorf Air Force Base and Ft. Richardson Army Post and their respective ranges.

English Bay (Alexandrovst), Eklutna, and Tyonek filed petitions for reserves some years ago; and currently the region is affected by protests filed by Eklutna and Cantwell Natives within the region as well as the Kenaitze Association and Tribe who are protesting the transfer of most of the Kenai Peninsula. Other large claims from other regions also overlap into the region.

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Natives in the region
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FIGURE V-57

CURRENT LAND STATUS, COOK INLET REGION

Total Area		17,500,000 acres
Withdrawals		2,360,500 acres
Kenai Moose Range	1,730,000 acres	
Chugach N.F.	500,000 acres	
Military	70,000 acres	
Tyonek N.R.	27,000 acres	
Miscellaneous, PP, PSR, PSC	20,000 acres	
Tuxedni N.W.R.	6,500 acres	
Lake George Recreation	5,000 acres	
Eklutna N.R.	2,000 acres	
State Selections		5,100,000 acres
Selected Only	300,000 acres	
Tentatively Approved	700,000 acres	
Patented	4,100,000 acres	
Other Patented or Claimed Land		
Patented	250,000 acres	
Claimed/Entered	100,000 acres	

Mineral Leasing

22 areas--state/federal coal prospecting permits
6 areas--state/federal coal leases
1 small area--"Indian" oil and gas leases
1 large area--state oil and gas leases
5 small, 1 medium area--federal oil and gas leases
13 known gas fields
4 known oil fields

Mineral Locations

45 areas--placer gold
21 areas--known production
62 areas--probable locations

Petitions under Act of May 1, 1936:

Within region: Eklutna, Tyonek

Partially within region: Nondalton, Newhalen, Kokhanok, Port Graham, Alexandrovsk (English Bay, not platted)

Native Protests:

Within region

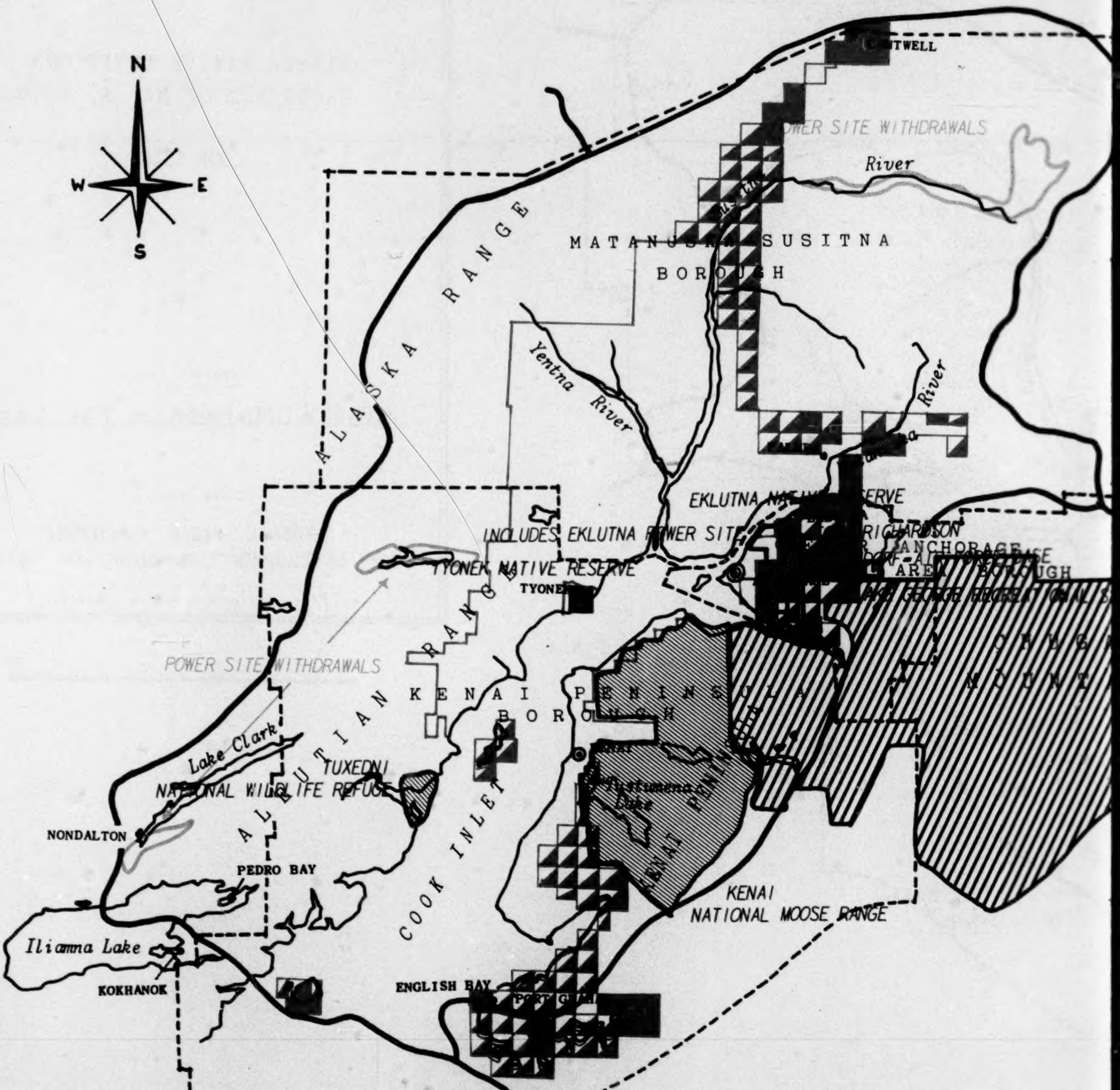
A-067547 (F-035181), Cantwell Natives, 1,336,900 acres
AA-368, Eklutna Village, 437,800 acres
AA-574, Eklutna Village, 23,000 acres
AA-699 (F-440), Nondalton-Lime Hills Natives, 20,028,600 acres, see also Bristol Bay and Kuskokwim regions
AA-714, Kenaitze Association and Tribe, 4,540,000 acres

Overlap from adjacent regions

A-061646, Gulkana Athabascans, see Copper River region
AA-545 (F-155), Ahtna Tannah Ninnah Association, see Copper River region
AA-648, Chugach Association, et al., see Prince William Sound region
AA-681 (F-392), Nikolai and Telida Villages, see Kuskokwim region
AA-872, Kodiak, et al., see Kodiak region

Public Domain--Estimate	9,600,000 acres

Source: U. S. Department of the Interior, Bureau of Land Management, Division of Lands and Minerals, Anchorage, Alaska.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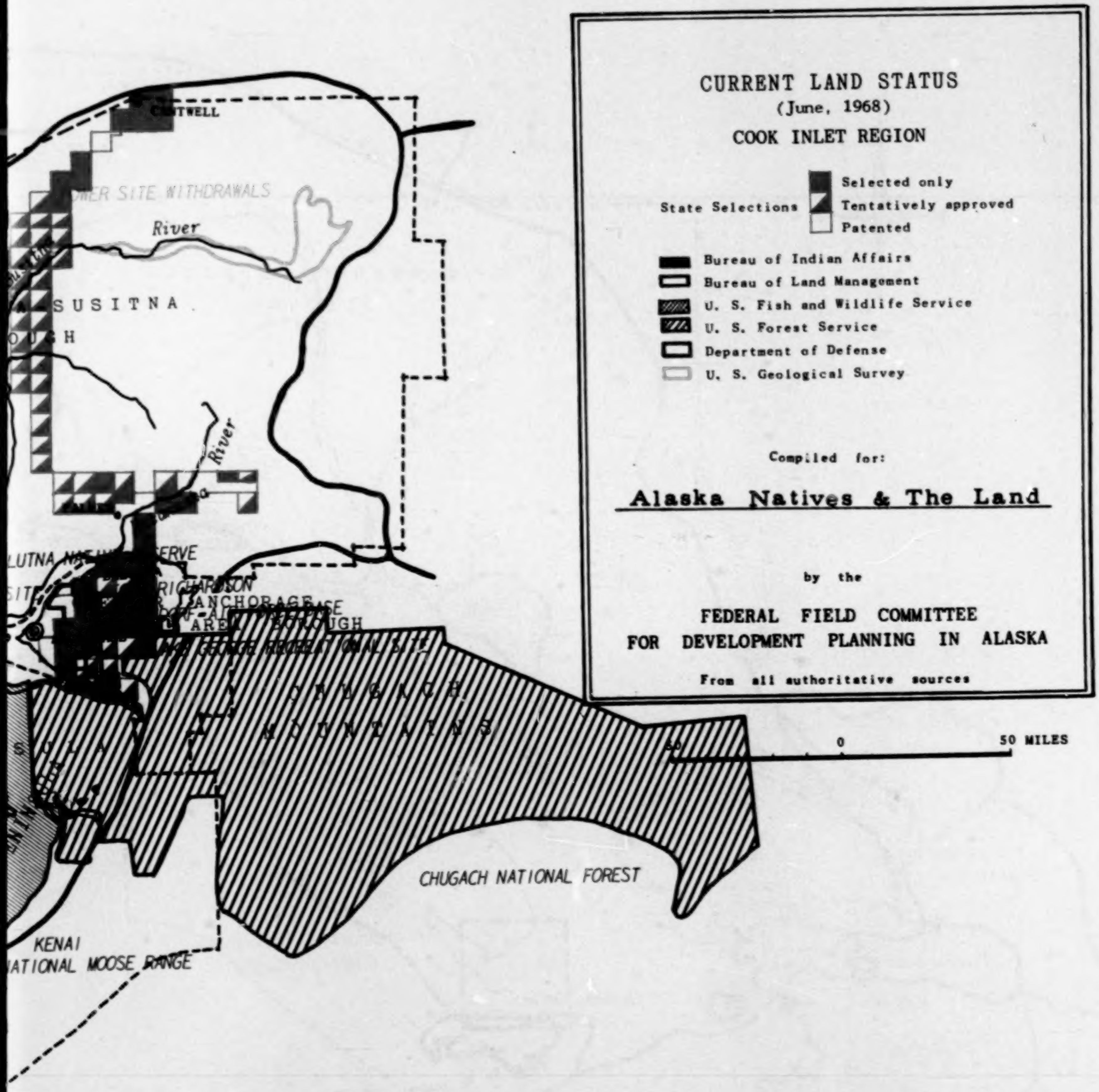
CANTWELL
POWER SITE WITHDRAWALS
River
ALASKA RANGE
MATANUSKA SUSITNA
BOROUGH
Yentna River
River
EKLUTNA NATIVE RESERVE
INCLUDES EKLUTNA POWER SITE
RICHARDSON
ANCHORAGE
AREA BOROUGH
TYONEK NATIVE RESERVE
TYONEK
POWER SITE WITHDRAWALS
ALEUTIAN RANGE
KENAI PENINSULA
BOROUGH
KENAI
Tustumena Lake
KENAI PENINSULA
Lake Clark
TUXEDNI
NATIONAL WILDLIFE REFUGE
NONDALTON
PEDRO BAY
COOK INLET
KENAI
NATIONAL MOOSE RANGE
Iliamna Lake
KOKHANOK
ENGLISH BAY
PORT GRAHAM

FIGURE V - 58

Note : Documentation limits scale presentation of P.S.R. & P.S.C. withdrawals.
They are diagramatic only.


CURRENT LAND STATUS
(June, 1968)
COOK INLET REGION
State Selections
Selected only
Tentatively approved
Patented
Bureau of Indian Affairs
Bureau of Land Management
U. S. Fish and Wildlife Service
U. S. Forest Service
Department of Defense
U. S. Geological Survey
Compiled for:
Alaska Natives & The Land
by the
FEDERAL FIELD COMMITTEE
FOR DEVELOPMENT PLANNING IN ALASKA
From all authoritative sources
50
0
50 MILES
CANTWELL
WER SITE WITHDRAWALS
River
SUSITNA
OUGH
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RICHARDSON
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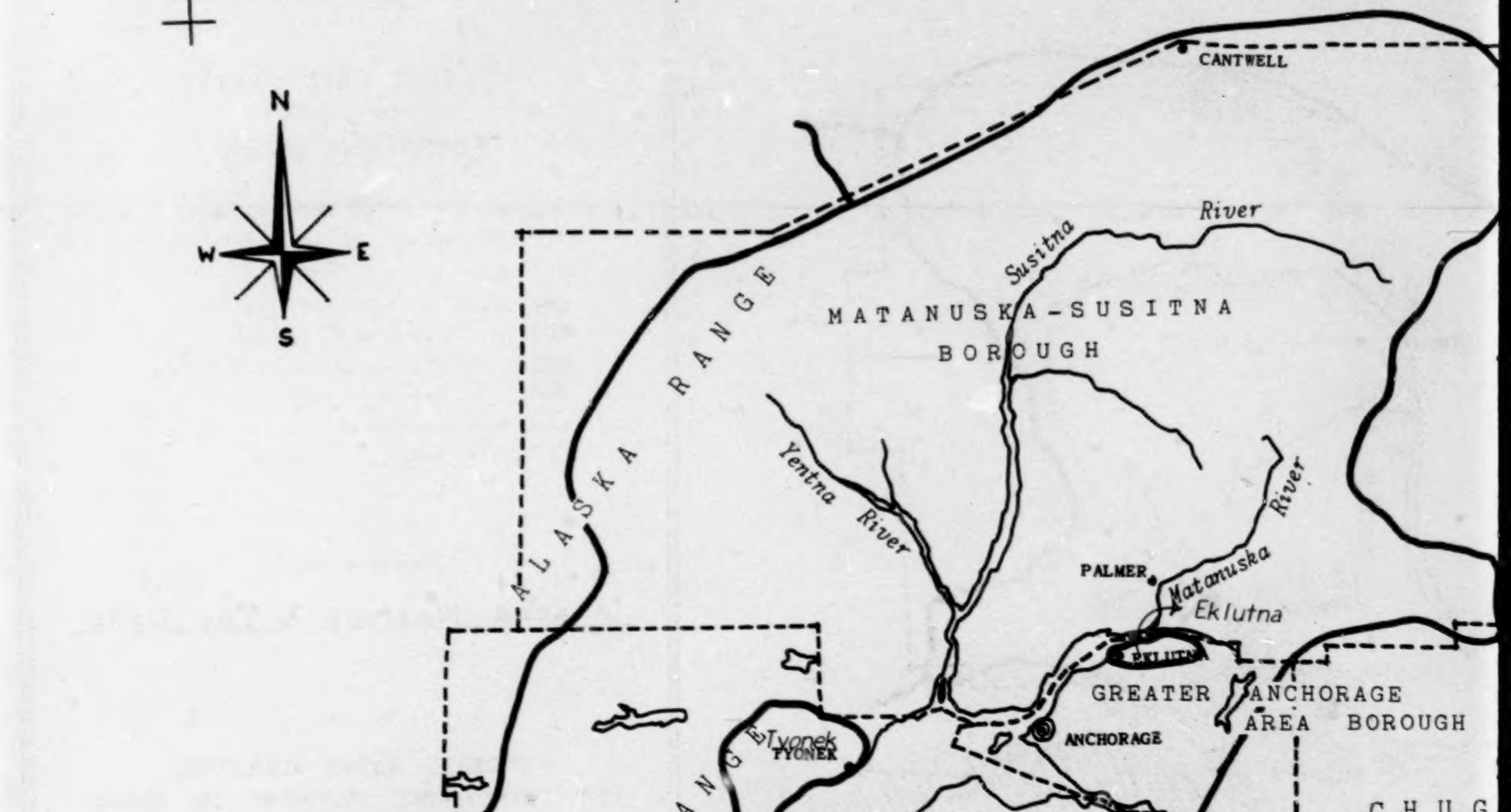
AREA BOROUGH
CHUGACH
MOUNTAINS
CHUGACH NATIONAL FOREST
KENAI
ATIONAL MOOSE RANGE

FIGURE V - 58


N
W
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CANTWELL
Susitna
River
MATANUSKA-SUSITNA
BOROUGH
ALASKA RANGE
Yentna
River
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PALMER
Matanuska
Eklutna
EKLUTNA
GREATER ANCHORAGE
AREA BOROUGH
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Tyonek
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ALEUTIAN RANGE
KENAI PENINSULA
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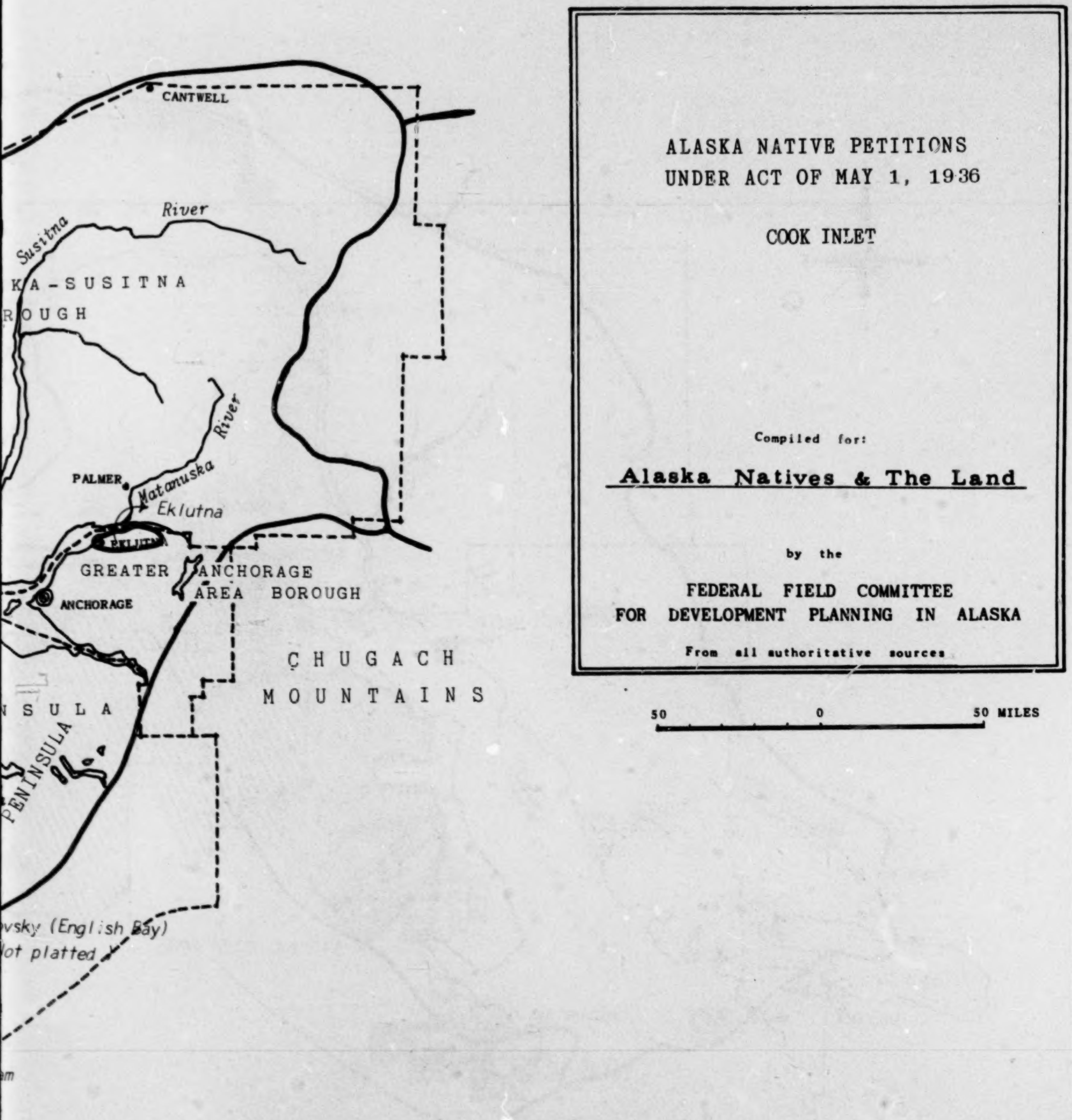
Tustumena
Lake
KENAI PENINSULA
Newhalen
Lake Clark
NONDALTON
Nondalton
PEDRO BAY
COOK INLET
Alexandrovsky (English Bay)
(Not platted)
Iliamna Lake
KOKHANOK
Kokhanok
ENGLISH BAY
PORT GRAHAM
Port Graham

FIGURE V - 59


CANTWELL
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River
PALMER
Matanuska
Eklutna
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GREATER ANCHORAGE
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PENINSULA
vsky (English Bay)
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50 MILES

ALASKA NATIVE PETITIONS
UNDER ACT OF MAY 1, 1936

COOK INLET

Compiled for:

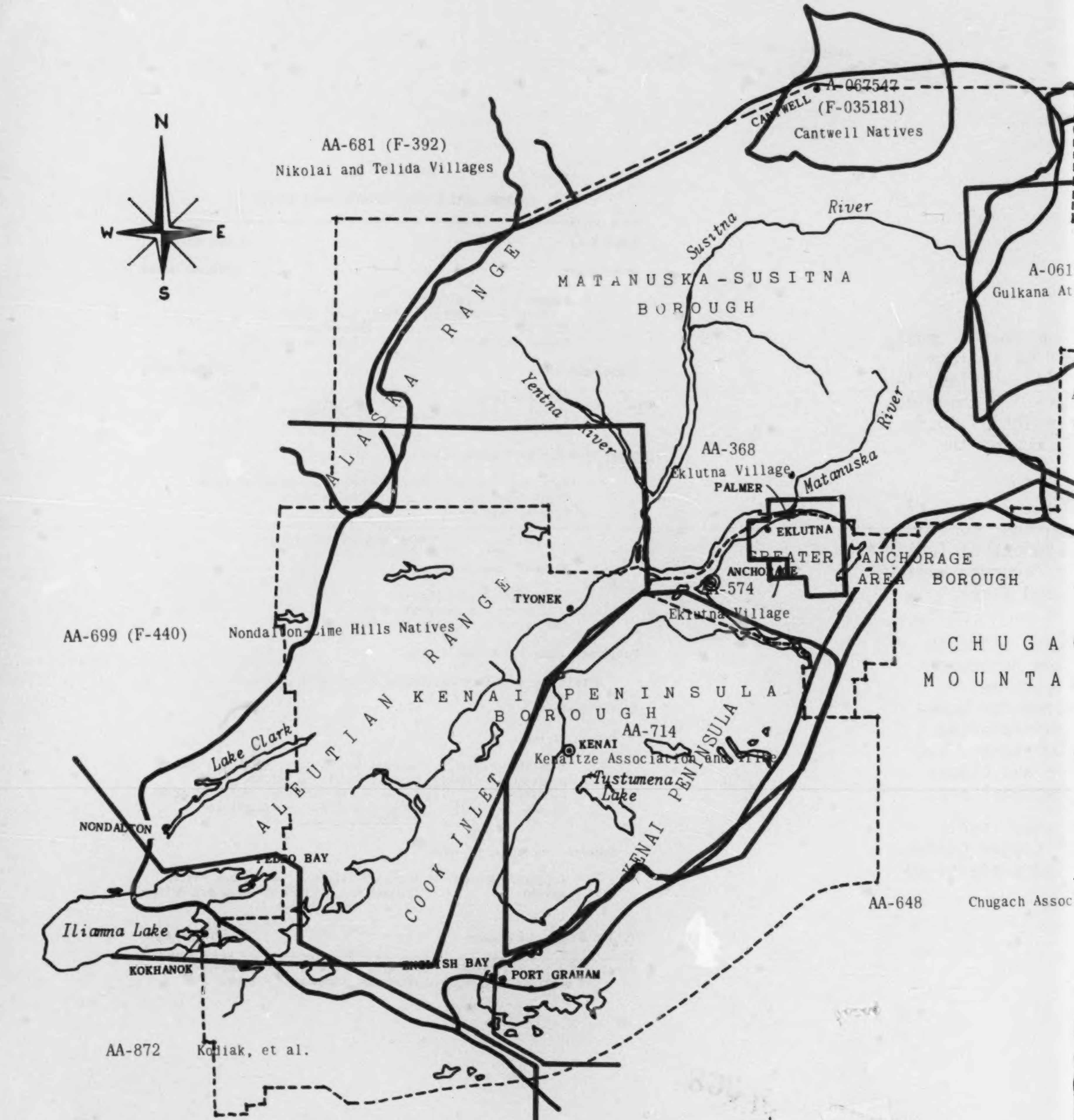
Alaska Natives & The Land

by the

FEDERAL FIELD COMMITTEE
FOR DEVELOPMENT PLANNING IN ALASKA

From all authoritative sources

FIGURE V – 59


N
W
E
S
AA-681 (F-392)
Nikolai and Telida Villages
CANTWELL
A-067547
(F-035181)
Cantwell Natives
Susitna
River
MATANUSKA-SUSITNA
BOROUGH
A-061
Gulkana At
ALASKA RANGE
Yentna
River
AA-368
Eklutna Village
Matanuska
River
PALMER
EKLUTNA
GREATER ANCHORAGE
AREA BOROUGH
ANCHORAGE
AA-574
Eklutna Village
TYONEK
AA-699 (F-440)
Nondalton-Lime Hills Natives
CHUGA
MOUNTA
ALEUTIAN RANGE
KENAI PENINSULA
BOROUGH
AA-714
KENAI
Kenaitze Association and Tribe
Tustumena
Lake
KENAI PENINSULA
Lake Clark
NONDALTON
PEDRO BAY
COOK INLET
AA-648
Chugach Assoc
Iliamna Lake
KOKHANOK
ENGLISH BAY
PORT GRAHAM
AA-872
Kodiak, et al.

903

FIGURE V - 60

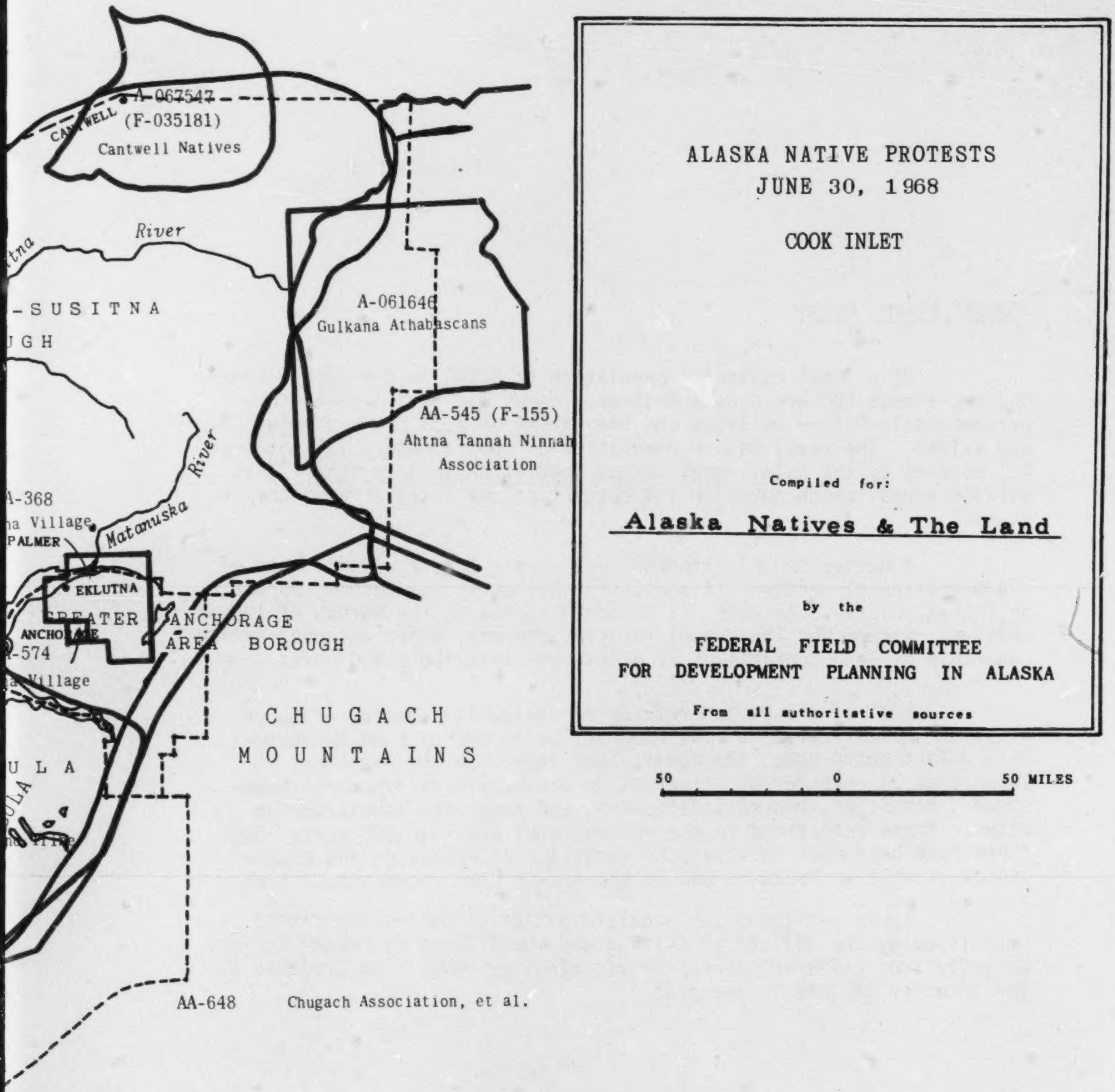

ALASKA NATIVE PROTESTS
JUNE 30, 1968
COOK INLET
Compiled for:
Alaska Natives & The Land
by the
FEDERAL FIELD COMMITTEE
FOR DEVELOPMENT PLANNING IN ALASKA
From all authoritative sources
50 0 50 MILES
CANTWELL
A-067547
(F-035181)
Cantwell Natives
River
A-061646
Gulkana Athabascans
-SUSITNA
UGH
AA-545 (F-155)
Ahtna Tannah Ninnah
Association
River
Matanuska
A-368
na Village
PALMER
EKLUTNA
GREATER ANCHORAGE
AREA BOROUGH
ANCHORAGE
-574
na Village
CHUGACH
MOUNTAINS
U L A
AA-648
Chugach Association, et al.

FIGURE V - 60

Copper River Region

Of a total estimated population of 2,400 in the Copper Center Region, almost 500 are Alaska Natives. More than half live in four predominantly Native villages and the others in such towns as Glenallen and Valdez. The rural Native population of approximately 275 comprises 0.7 percent of the total rural Native population in a region of 16.5 million acres, which makes up 4.4 percent of the total area of the state.

A Native school withdrawal at Copper Center, the largest of the predominantly Native villages, of 1,041 acres has become, by usage, an Indian reserve. As such, it is administered by the Bureau of Indian Affairs. Except for the school reserve, the only other recorded Native ownership of land consists of 22 allotments totaling 2,600 acres.

Most of the region remains in the public domain, although proposed classification of the area by the Bureau of Land Management will affect entry under the public land laws. In the meantime, it is an area of considerable interest to non-Native entrymen for homesteads, homesites, recreational sites, and trade and manufacturing sites. State selections in the region total only 340,000 acres, but these have been made in strategic locations at Glenallen and Copper Center as well as Mentasta and in the Paxson Lake recreational area.

Early petitions for a determination of possessory rights were filed by the Village of Chitina and the Village of Copper Center. Recently four different groups or associations have filed protests to the transfer of land in the area.

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recorded Native
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Copper Center.
d protests to

FIGURE V - 61

CURRENT LAND STATUS, COPPER RIVER REGION

Total Area		16,500,000 acres
Withdrawals		259,041 acres
Paxson Lake - pending classification/legislation	8,000 acres	
PSR/PSC	250,000 acres	
Copper Center N.R.	1,041 acres	
State Selections		340,000 acres
Selected Only	0	
Tentatively Approved	250,000 acres	
Patented	90,000 acres	

Other Patented or Claimed Lands

Patented - included in state selection patented above
Claimed/Entered 30,900 acres
Mineral leasing

1 medium area - federal oil and gas leases

Mineral locations

21 areas - gold placer
13 areas - known production
48 areas - probable locations

Petitions under Act of May 1, 1936:

Within region: Chitina, Copper Center (not platted)

Native Protests:

Within region

A-061646 (F-033429), Gulkana Athabascans, 2,245,000 acres
A-061650 (F-033402), Mentasta Village, 592,800 acres
A-062051 " Copper Center Village, 1,102,300 acres
AA-545 (F-155) , Ahtna Tannah Ninnah Association, 13,401,400 acres

Overlap from adjacent regions

F-028757 (AA-897) , Northway Village - see Tanana region
AA-648 " Chugach Association et al., see Prince William Sound region

Public Domain - Estimate	15,875,000 acres

Source: U. S. Department of Interior, Bureau of Land Management, Division of Lands and Minerals, Anchorage, Alaska.

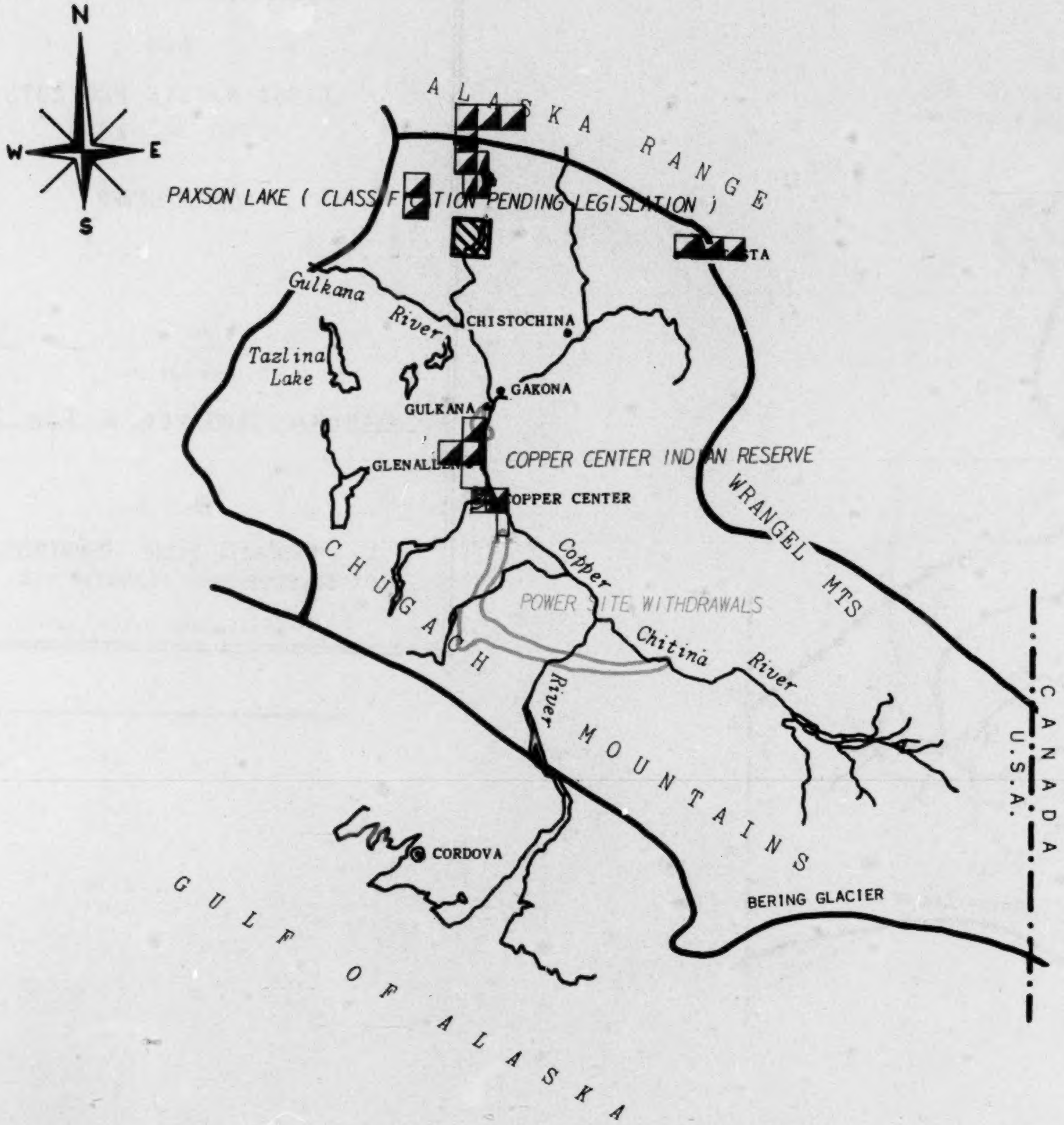
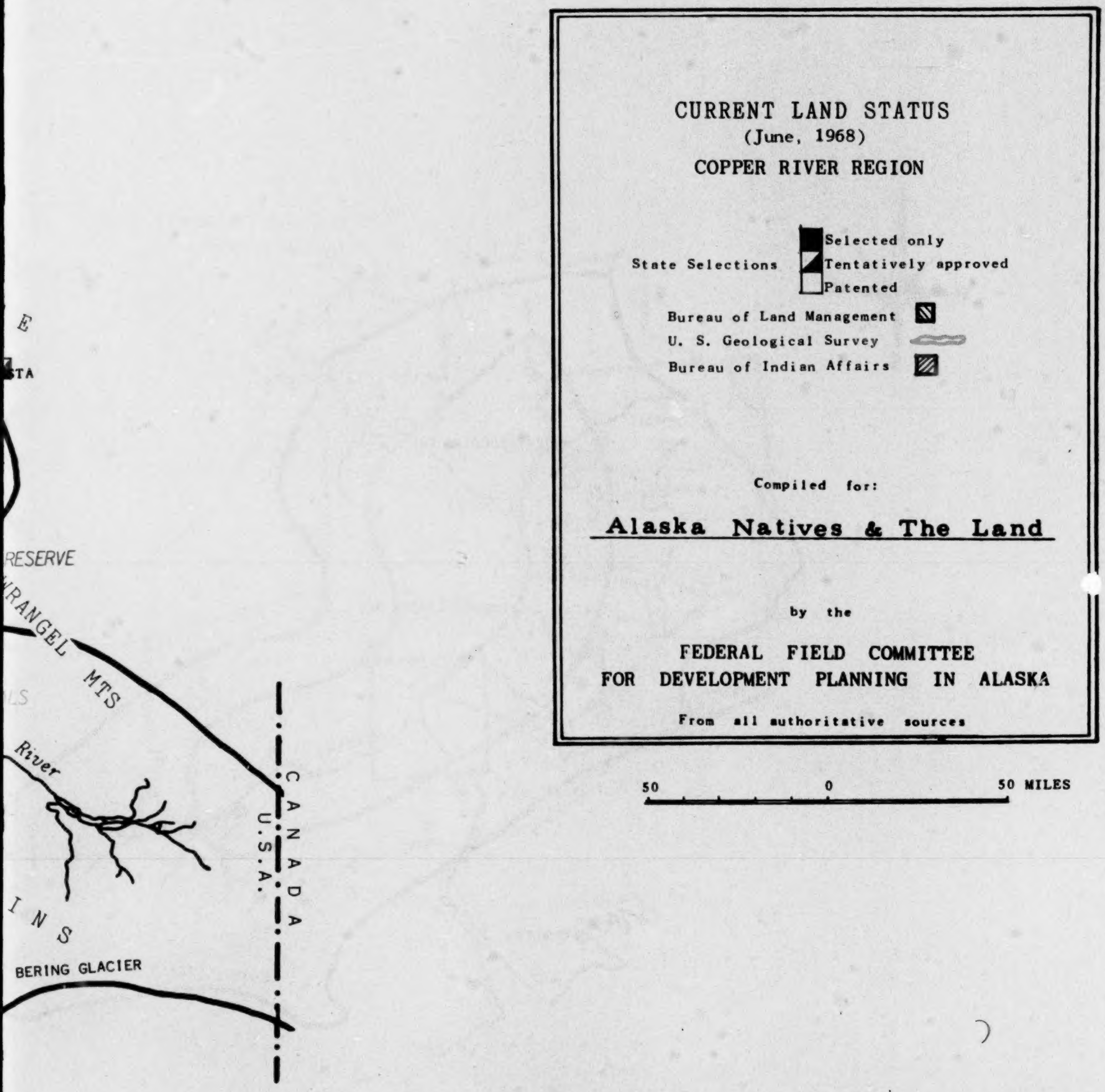

N
W
E
S
ALASKA RANGE
PAXSON LAKE (CLASSIFICATION PENDING LEGISLATION)
STA
Gulkana River
Tazlina Lake
CHISTOCHINA
GAKONA
GULKANA
GLENALLEN
COPPER CENTER INDIAN RESERVE
COPPER CENTER
WRANGEL MTS
CHUGACH MOUNTAINS
Copper River
POWER SITE WITHDRAWALS
Chitina River
CANADA
U.S.A.
CORDOVA
BERING GLACIER
GULF OF ALASKA

FIGURE V - 62

Note : Documentation limits scale presentation of P.S.R. , P.S.C. & B.L.M. withdrawals. They are diagramatic only.


E
TA
RESERVE
RANGEL MTS
LS
River
CANADA
U.S.A.
INS
BERING GLACIER
50
0
50 MILES

CURRENT LAND STATUS
(June, 1968)
COPPER RIVER REGION

State Selections
- ■ Selected only
- ◩ Tentatively approved
- □ Patented

Bureau of Land Management ▧
U. S. Geological Survey ▭
Bureau of Indian Affairs ▨

Compiled for:

Alaska Natives & The Land

by the

FEDERAL FIELD COMMITTEE
FOR DEVELOPMENT PLANNING IN ALASKA

From all authoritative sources

FIGURE V - 62

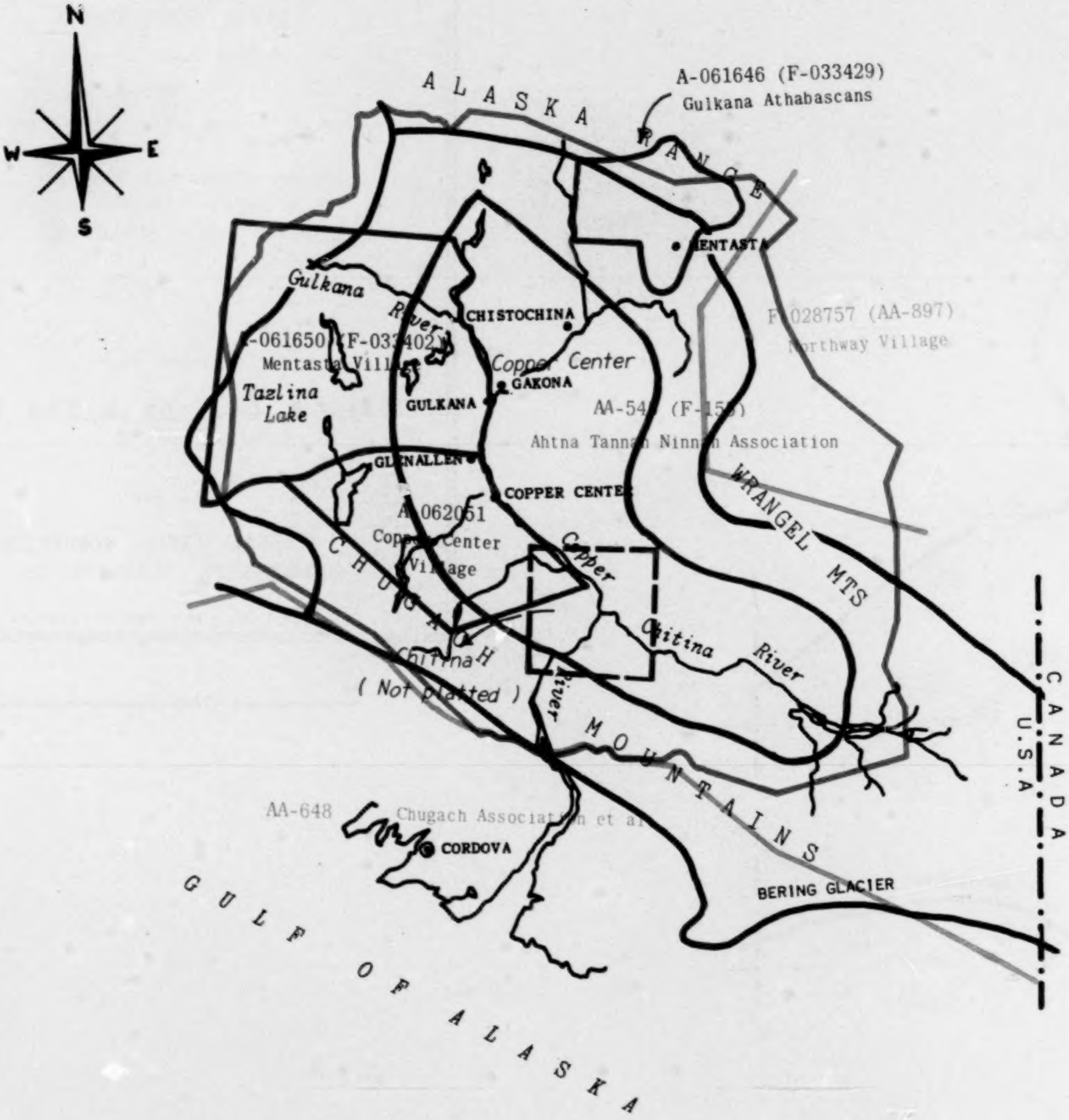
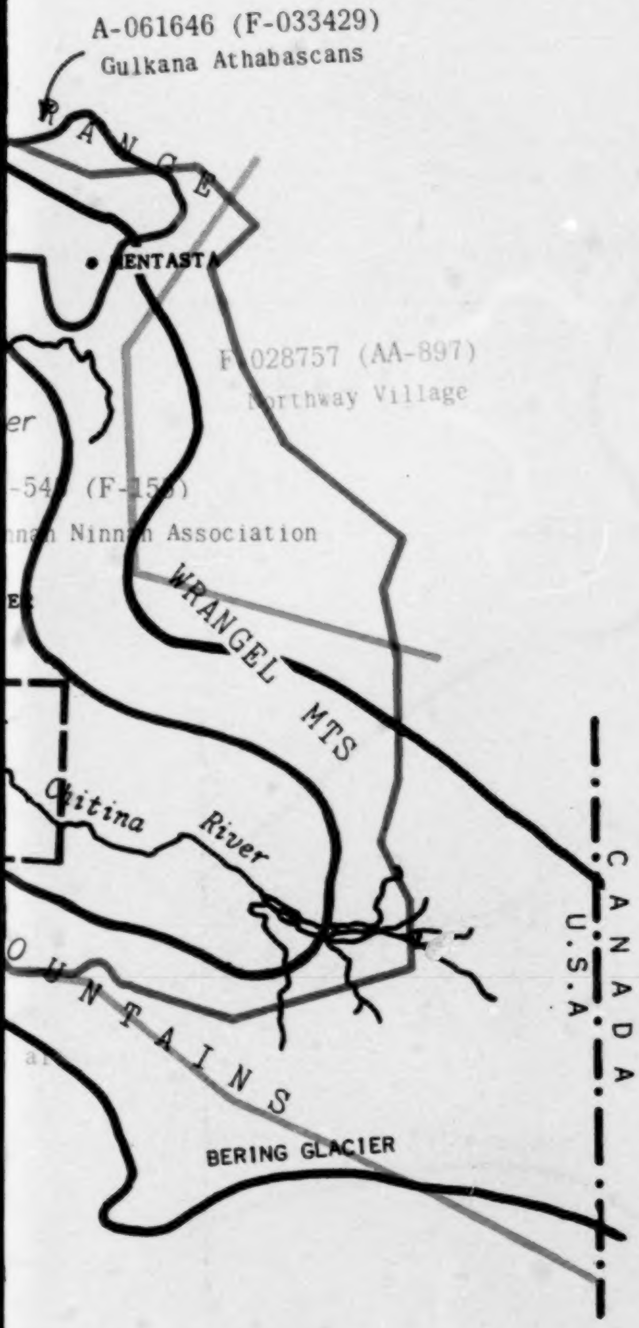

N
W
E
S
ALASKA RANGE
A-061646 (F-033429)
Gulkana Athabascans
MENTASTA
F-028757 (AA-897)
Northway Village
Gulkana River
CHISTOCHINA
A-061650 (F-033402)
Mentasta Village
Copper Center
GAKONA
Tazlina Lake
GULKANA
AA-54 (F-15
Ahtna Tannah Ninnah Association
GLENNALLEN
COPPER CENTER
A-062051
Copper Center
Village
WRANGEL MTS
CHUGACH MOUNTAINS
Copper River
Chitina River
Chitina
(Not platted)
CANADA
U.S.A
AA-648
Chugach Association et al
CORDOVA
BERING GLACIER
GULF OF ALASKA

FIGURE V - 63


A-061646 (F-033429)
Gulkana Athabascans
RANGE
MENTASTA
F-028757 (AA-897)
Northway Village
Ninn Association
WRANGEL MTS
Chitina River
MOUNTAINS
BERING GLACIER
CANADA
U.S.A

ALASKA NATIVE PETITIONS
UNDER ACT OF MAY 1, 1936

and

ALASKA NATIVE PROTESTS
JUNE 30, 1968

COPPER RIVER

Compiled for:

Alaska Natives & The Land

by the

FEDERAL FIELD COMMITTEE
FOR DEVELOPMENT PLANNING IN ALASKA

From all authoritative sources

50 0 50 MILES

910

FIGURE V - 63

Gulf of Alaska Region

Except for over 400 Alaska Natives in Cordova and nearly 100 others in Valdez, the balance of the Native population in the region live in three villages. Although Seward is included in this geographic region, the Seward population is compiled in total figures for the Kenai Peninsula and included in the Cook Inlet Region. Most of the rural Alaska Natives in the region live in the Village of Tatitlek on the shores of Prince William Sound. The original Tatitlek inhabitants were joined by residents of the village of Chenga, which had been destroyed by the 1964 earthquake. They live on a 480-acre withdrawal carved out of the Chugach National Forest. This Native reserve and six allotments, totaling 314 acres, constitute the known Native ownership in the region.

More than one-fourth of the region is withdrawn as a part of the Chugach National Forest.

State selections, which total 1 million acres, have been made near the inhabited areas of Valdez, Cordova, Whittier, and Seward, as well as the former Katalla oil field area near Yakutat and Icy Bay.

A portion of Middleton Island has been released from withdrawal and sold under the General Services Administration to private interests.

The entire region is blanketed by a protest filed by the Chugach Native Association, Tatitlek Village, Chugachimute Tribe, and Eyak Native Tribe. In addition, a separate protest has been filed by the Native Village of Yakutat.

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tat and Icy Bay.

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filed by the
mute Tribe, and
as been filed by

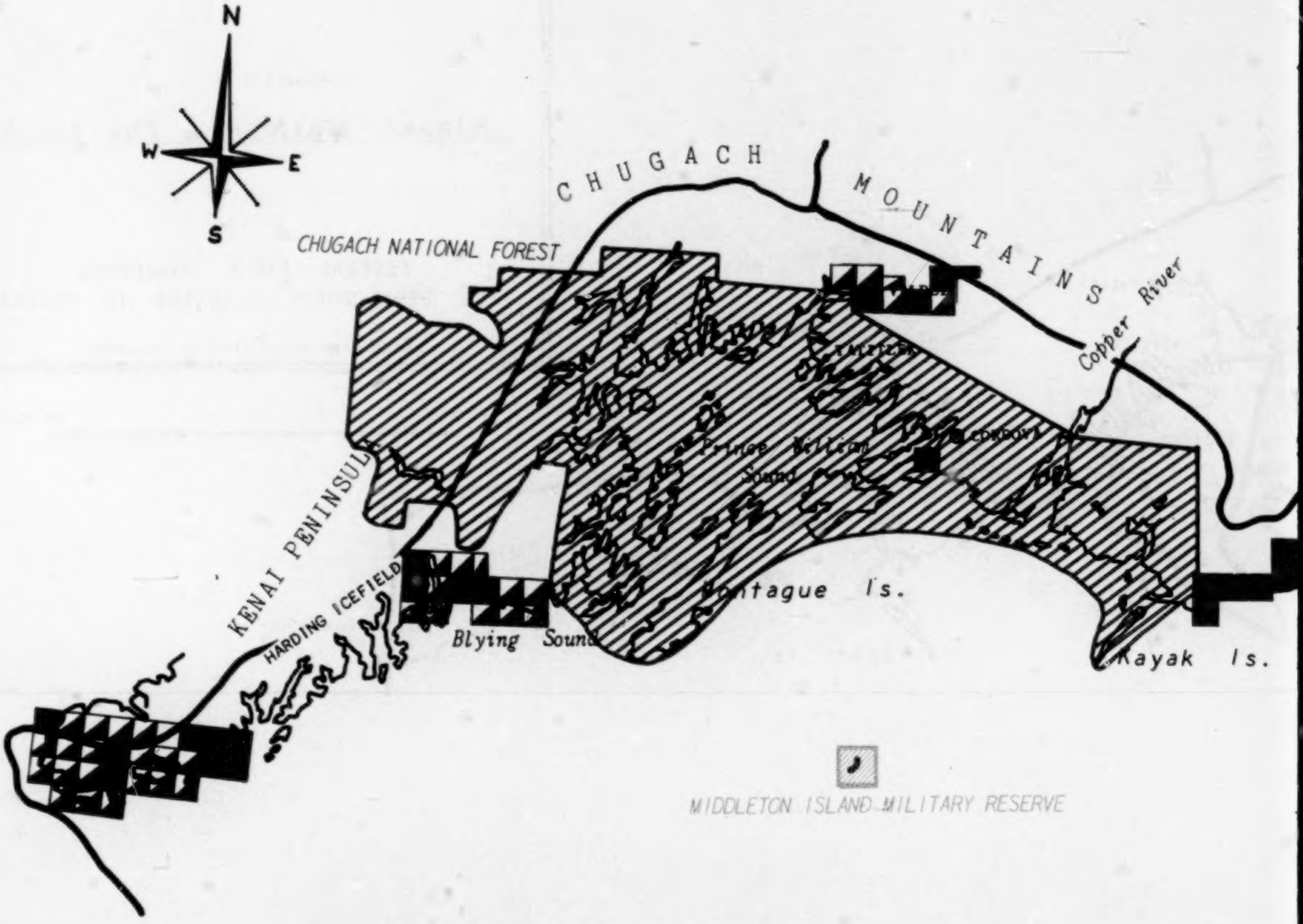
FIGURE V - 64

CURRENT LAND STATUS, GULF OF ALASKA REGION

Total Area		12,500,000 acres
Withdrawals		3,731,980 acres
Chugach N.F.	3,726,000 acres	
Middleton Island (Mil.)	5,500 acres	
Tatitlek N.R.	480 acres	
State Selections		1,000,000 acres
Selected Only	400,000 acres	
Tentatively Approved	600,000 acres	
Patented	0	
Other Patented or Claimed Lands		
Patented	49,200 acres	
Claims/Entries	9,000 acres	
Mineral Leasing		
Two small, two medium areas of federal oil and gas leasing - includes one known oil field Three small areas of state oil and gas leasing One area, federal coal prospecting permits		
Mineral Locations		
7 areas - gold placer 28 areas - known production 40 plus areas - probable locations		
Petitions under Act of May 1, 1936:		
Within the region: Tatitlek, Port Graham, Chenega*		
Native Protests:		
A-062052, Yakutat Village, 260,000 acres AA-541 , Chugach Native Association, Tatitlek Village, Chugachimute Tribe, and Eyak Native Tribe, 366,700 acres AA-648 , Chugach Native Association, Tatitlek Village, Chugachimute Tribe, and Villages of Port Graham and English Bay, 12,000,000 acres		
Public Domain - Estimate		7,700,000 acres

Source: U. S. Department of the Interior, Bureau of Land Management, Division of Lands and Minerals, Anchorage, Alaska.

*Village destroyed in March 27, 1964, earthquake.


N
W
E
S
CHUGACH MOUNTAINS
CHUGACH NATIONAL FOREST
Copper River
CORDOVA
Prince William Sound
Montague Is.
Kayak Is.
Blying Sound
KENAI PENINSULA
HARDING ICEFIELD
MIDDLETON ISLAND MILITARY RESERVE

913

FIGURE V - 65

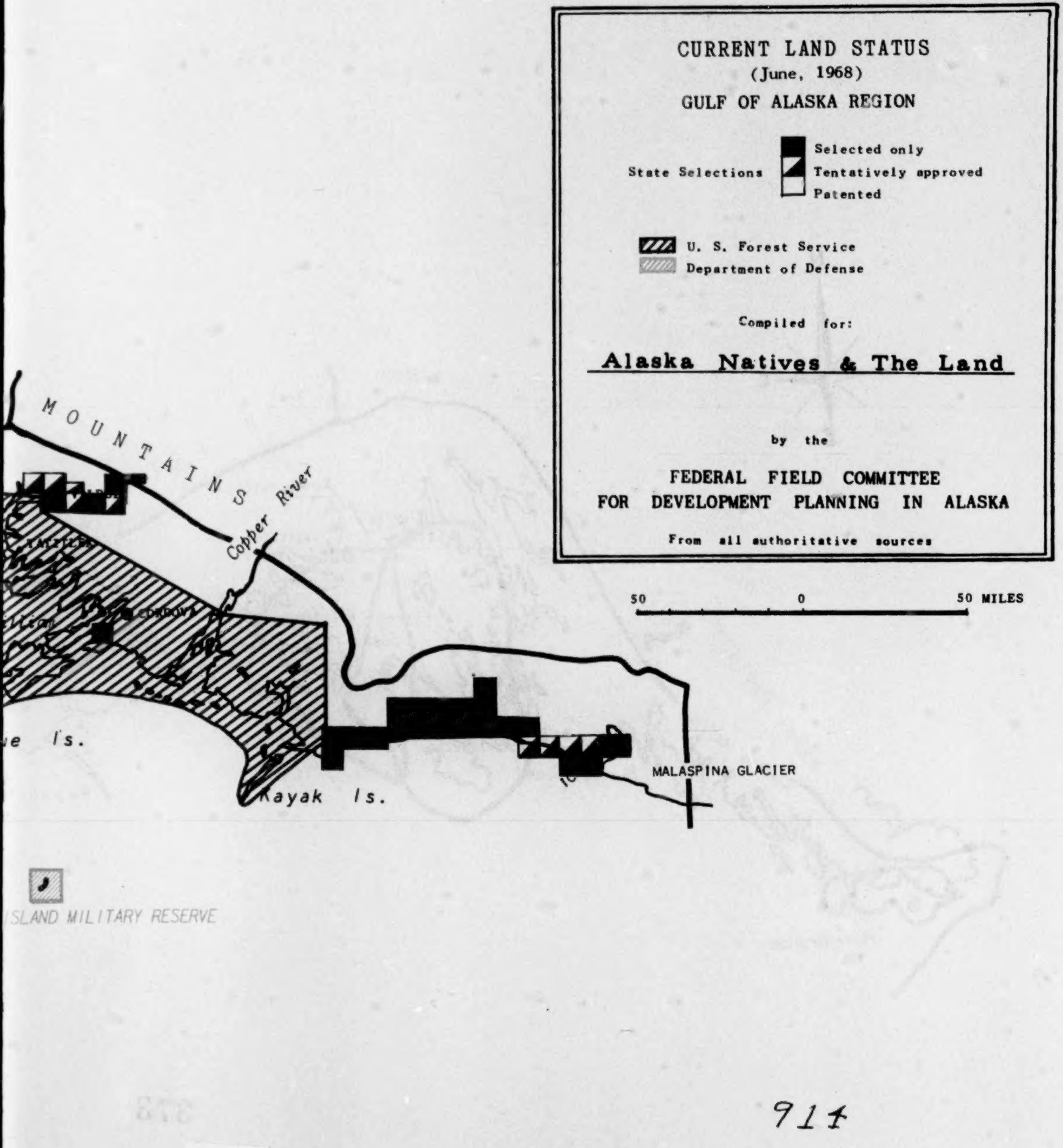
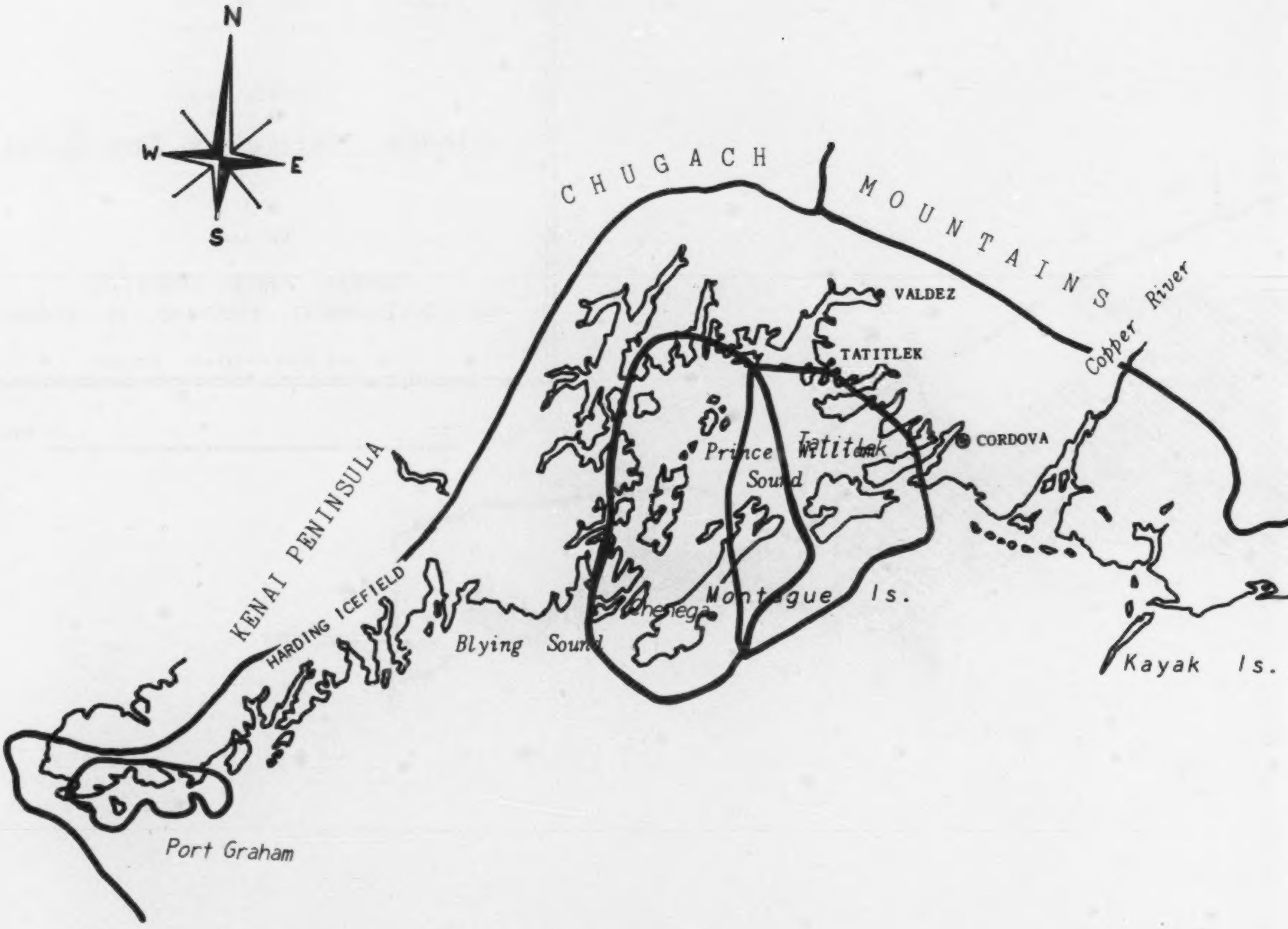
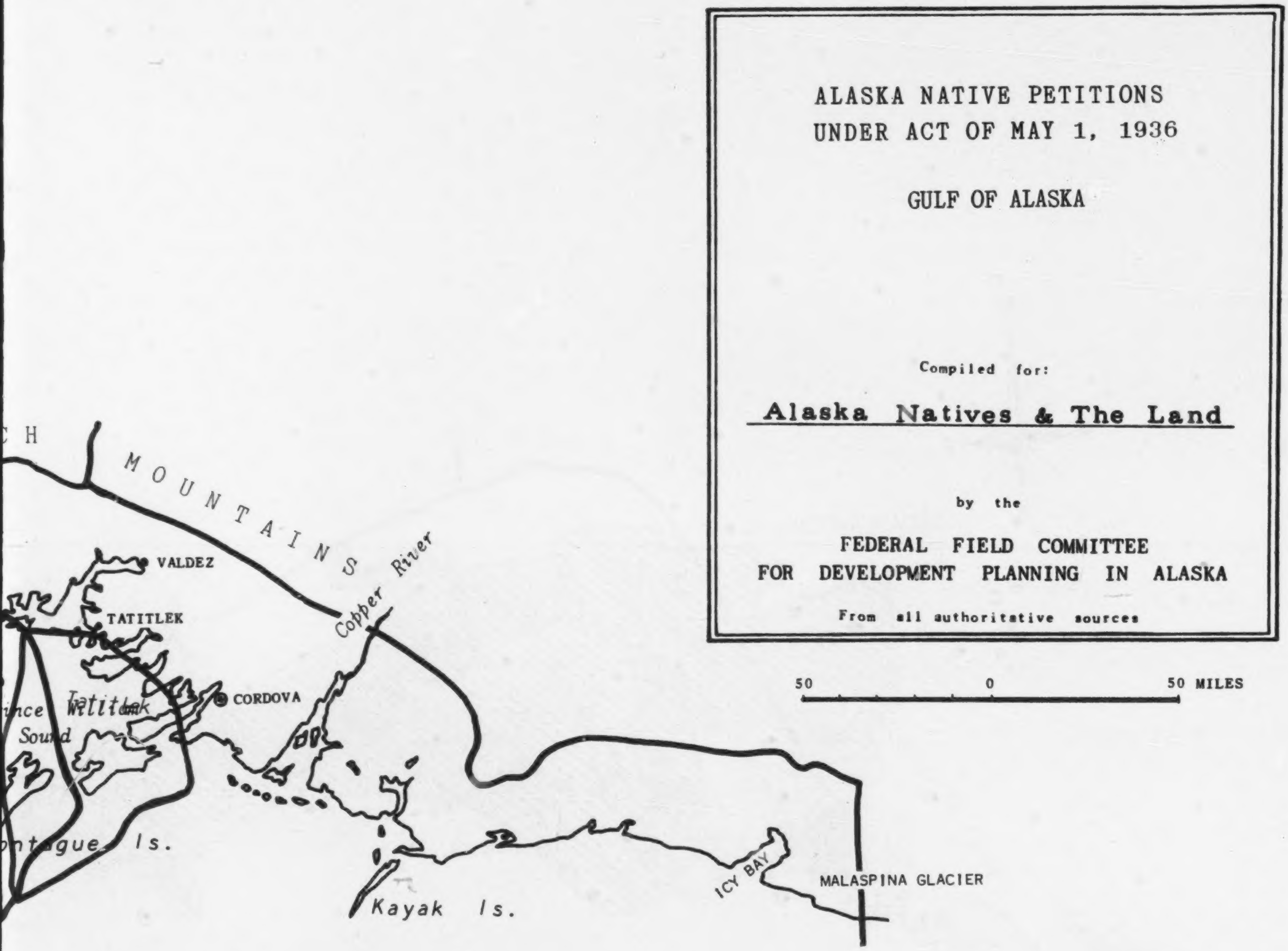

CURRENT LAND STATUS
(June, 1968)
GULF OF ALASKA REGION
State Selections
■ Selected only
◪ Tentatively approved
□ Patented
▨ U. S. Forest Service
▨ Department of Defense
Compiled for:
Alaska Natives & The Land
by the
FEDERAL FIELD COMMITTEE
FOR DEVELOPMENT PLANNING IN ALASKA
From all authoritative sources
50
0
50 MILES
MOUNTAINS
Copper River
CORDOVA
Is.
Kayak Is.
MALASPINA GLACIER
ISLAND MILITARY RESERVE

FIGURE V - 65


N
W
E
S
CHUGACH MOUNTAINS
VALDEZ
TATITLEK
Copper River
CORDOVA
Prince William Sound
Tatitlek
KENAI PENINSULA
HARDING ICEFIELD
Blying Sound
Chenega
Montague Is.
Kayak Is.
Port Graham

915

FIGURE V - 66



ALASKA NATIVE PETITIONS
UNDER ACT OF MAY 1, 1936

GULF OF ALASKA

Compiled for:

Alaska Natives & The Land

by the

FEDERAL FIELD COMMITTEE
FOR DEVELOPMENT PLANNING IN ALASKA

From all authoritative sources

50
0
50 MILES
CH
MOUNTAINS
Copper River
VALDEZ
TATITLEK
Tatitlek
CORDOVA
ince William
Sound
ntague Is.
Kayak Is.
ICY BAY
MALASPINA GLACIER

916

FIGURE V - 66

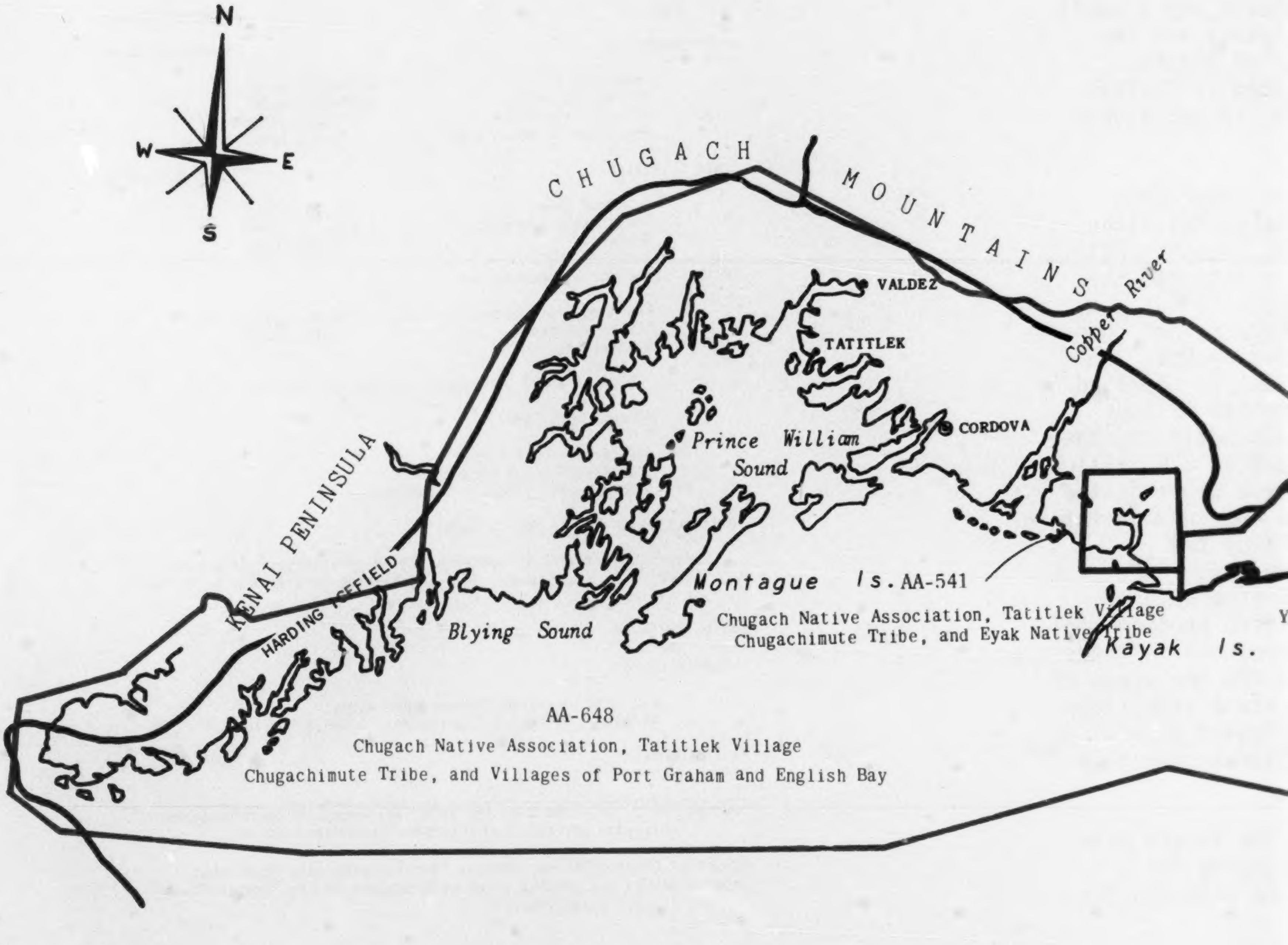
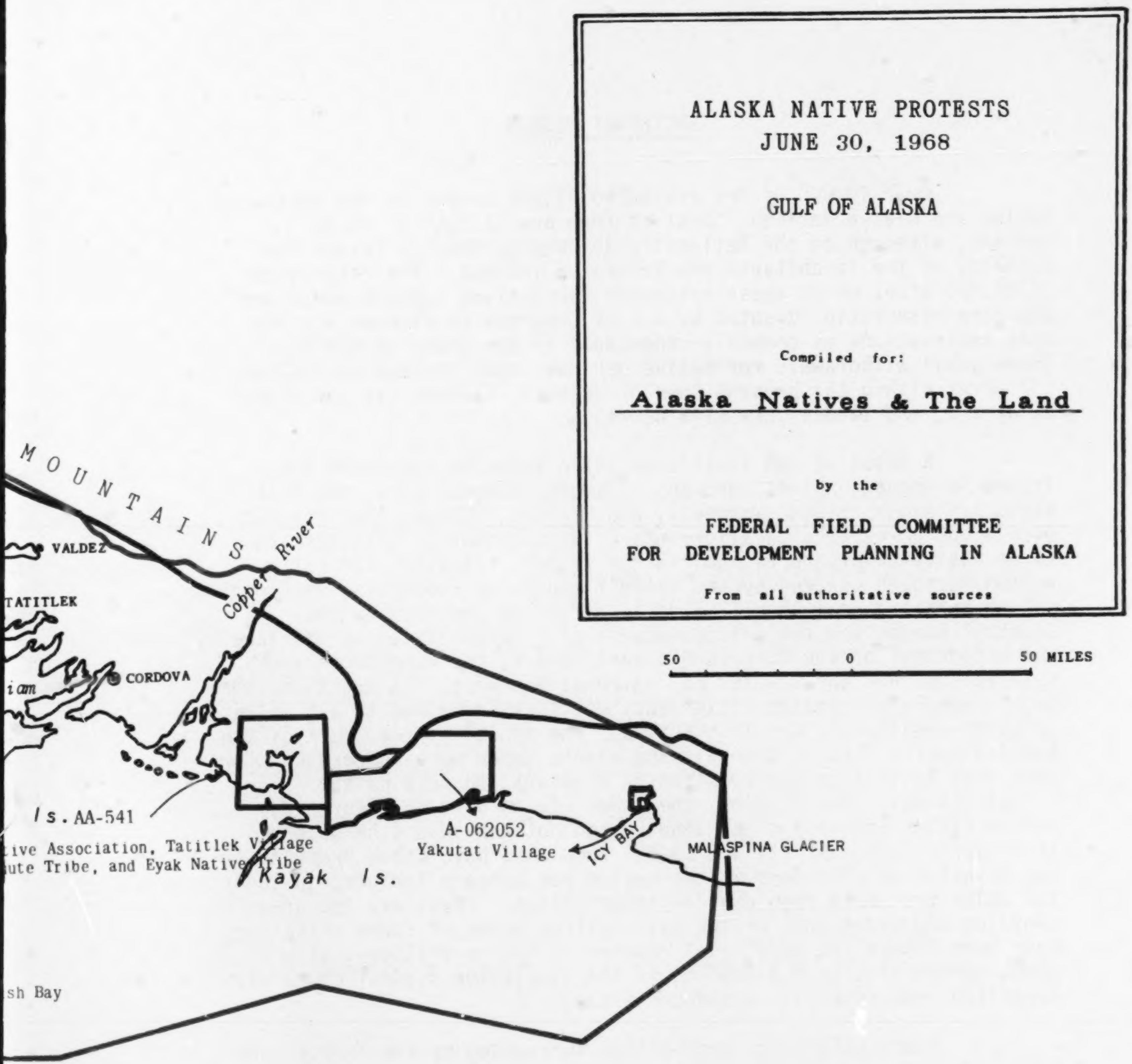

N
W
E
S
CHUGACH MOUNTAINS
Copper River
VALDEZ
TATITLEK
CORDOVA
Prince William Sound
KENAI PENINSULA
HARDING ICEFIELD
Blying Sound
Montague Is. AA-541
Chugach Native Association, Tatitlek Village
Chugachimute Tribe, and Eyak Native Tribe
Kayak Is.
Y
AA-648
Chugach Native Association, Tatitlek Village
Chugachimute Tribe, and Villages of Port Graham and English Bay

FIGURE V – 67



ALASKA NATIVE PROTESTS
JUNE 30, 1968

GULF OF ALASKA

Compiled for:

Alaska Natives & The Land

by the

FEDERAL FIELD COMMITTEE
FOR DEVELOPMENT PLANNING IN ALASKA

From all authoritative sources

50
0
50 MILES
MOUNTAINS
Copper River
VALDEZ
TATITLEK
CORDOVA
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Is. AA-541
tive Association, Tatitlek Village
ute Tribe, and Eyak Native Tribe
Kayak Is.
A-062052
Yakutat Village
ICY BAY
MALASPINA GLACIER
sh Bay

FIGURE V - 67

SOUTHEAST REGION

Over 10,000 of the estimated 37,000 people in the Southeast Region are Alaska Natives. Most of them are Tlingit or Haida Indians, although on the Metlakatla Reserve on Annette Island the majority of the inhabitants are Tsimshian Indians. The reservation of 87,000 acres which these estimated 950 Indians inhabit and a small 800-acre reservation created by Act of Congress at Klukwan are the only reservations as commonly understood in the State of Alaska. Three small withdrawals for Native use have been created at Chilkat (17 acres within the present town of Haines), Klukwan (an additional 82 acres), and Yendistucky (143 acres).

A total of 388 restricted-title townsite lots have been issued in Angoon, Haines, Hoonah, Hydaburg, Juneau, Kake, Ketchikan, Klawock, Saxman, Sitka, Wrangell, and Yakutat. These, together with over 3,000 acres held as allotments by 46 allottees, constitute the known Native ownership of land in the region. However, the entire region has been claimed by the Tlingit and Haida residents, and compensation totaling more than $7.5 million has been awarded by the Court of Claims for the extinguishment of "Indian Title" to the land by the withdrawal of the Tongass National Forest, the Annette Islands Reservation, and the Glacier Bay National Monument. In addition, the Court found that "Indian Title" survived unextinguished to 2.6 million acres of additional land in the area. The denial by the Court of the Commissioner's finding that fishing rights taken were compensable for more than $8 million has resulted in a recent new suit by the Tlingit-Haidas. In addition, they have claims pending before the Indian Claims Commission for lands taken between 1935 (the date of their jurisdictional Act) and 1946. They also have filed protests to the transfer of all lands in the region not already included in lands for which they have been awarded compensation. These are the areas of conflict and where most of the half million acres of state selections have been filed. Of additional concern to Native villages, as well as other communities in the region, is the limitation against community expansion into federally withdrawn areas.

State selections near cities surrounded by the forest have been made under that portion of the Statehood Act providing for a maximum of 400,000 acres of National Forest lands to be selected for community expansion.

Japonski Island near Sitka, the site of Mt. Edgecumbe Boarding School, is now in the process of transfer from the Public Health Service to the Bureau of Indian Affairs.

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filed protests to
included in lands
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state selections
llages, as well as
gainst community

the forest have
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be selected for

. Edgecumbe
rom the Public

FIGURE V -68

CURRENT LAND STATUS, SOUTHEAST REGION

Total Area		27,000,000 acres
Withdrawals		19,000,000 acres
Tongass N.F.	16,015,900 acres	
Glacier Bay N.M.	2,826,500 acres	
Annette Island N.R.	115,000 acres	
Forrester Island N.W.R.	3,000 acres	
State Selections		550,000 acres
Selected Only	150,000 acres	
Tentatively Approved	300,000 acres	
Patented	100,000 acres	
Other Patented or Claimed Lands		
Patented--included with state selection figure above		
Claims/Entries	1,300 acres	
Mineral leasing		
3 small areas of federal oil and gas leasing		
Mineral locations		
18 areas--gold placer		
58 areas--known production		
Many areas--probable locations		
Petitions under Act of May 1, 1936:		
Hearings were held on petitions filed by villages and associations. Claims were later merged in Tlingit-Haida suit in the U. S. Court of Claims.		
Native Protests:		
Within region		
A-067508, Chilkoot Indians, 640 acres		
AA-431 , Tlingit-Haida Indians, 3,088,800 acres		
Public Domain		7,400,000 acres*

Source: U. S. Department of the Interior, Bureau of Land Management, Division of Lands and Minerals, Anchorage, Alaska.

*Court of Claims 1968 decision in Tlingit-Haida case found that approximately 2.6 million acres were subject to the "Indian Title" of the Tlingit-Haida Indians.

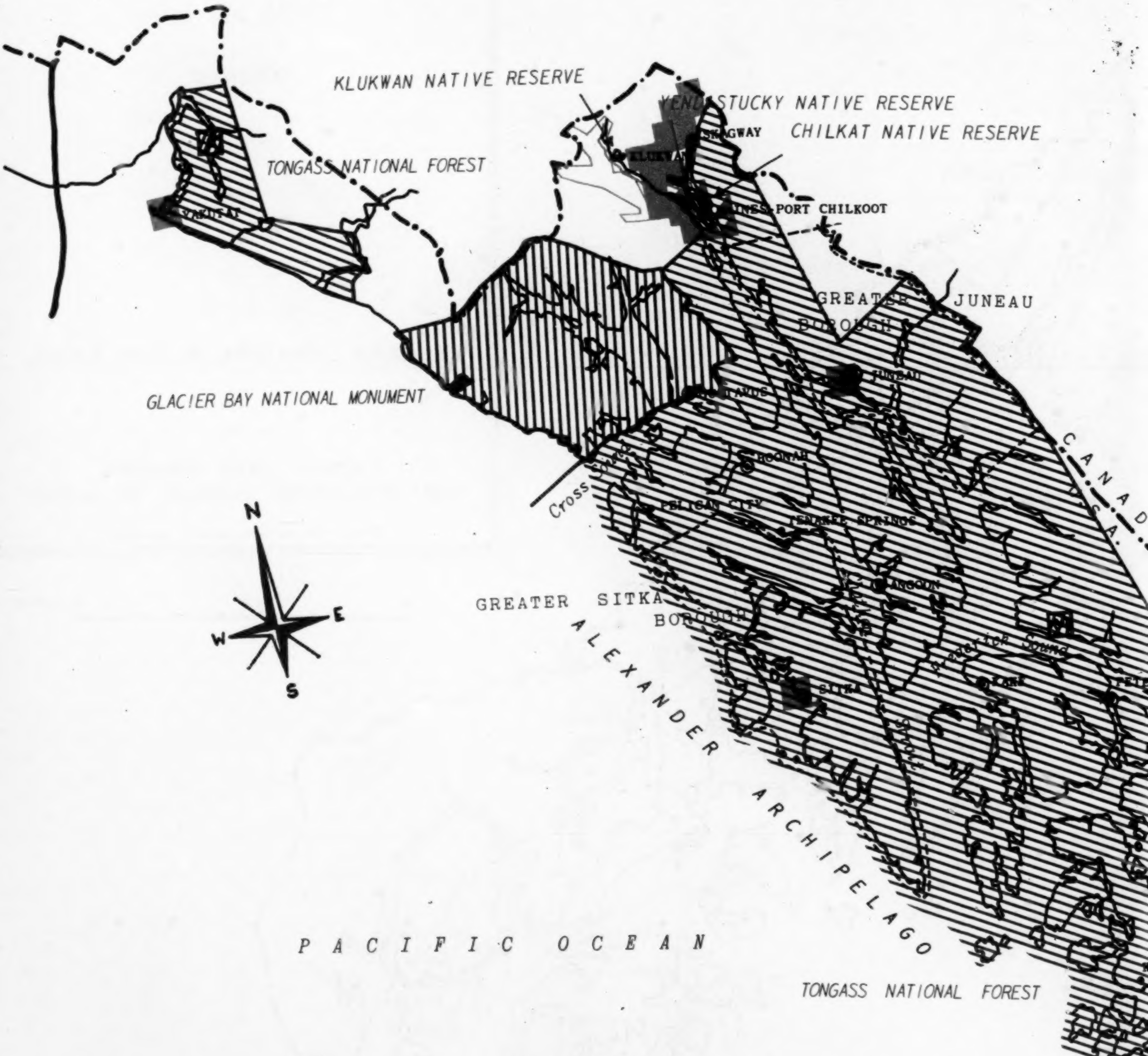
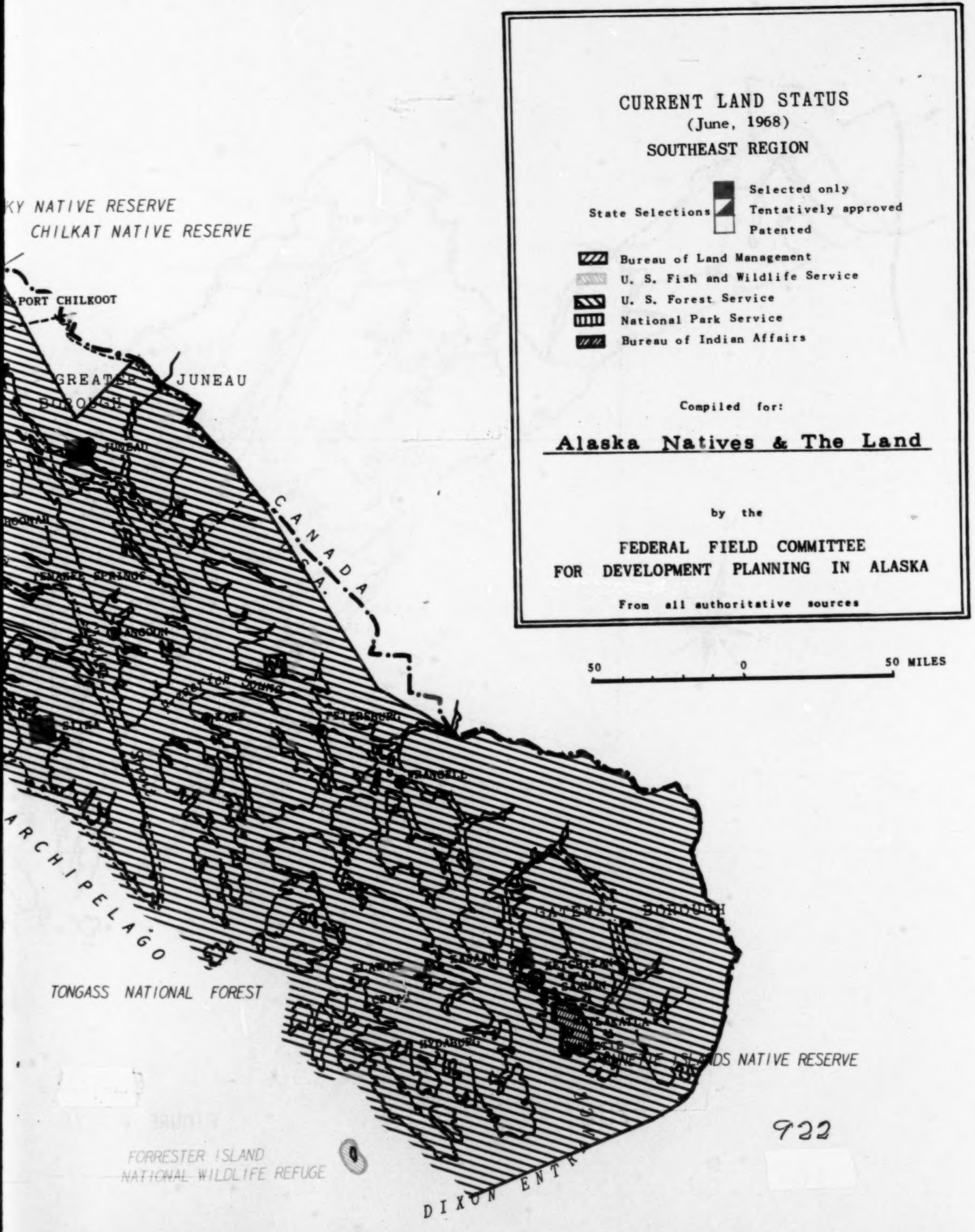

KLUKWAN NATIVE RESERVE
YENDESTUCKY NATIVE RESERVE
SKAGWAY
CHILKAT NATIVE RESERVE
TONGASS NATIONAL FOREST
YAKUTAT
KLUKWAN
HAINES-PORT CHILKOOT
GREATER JUNEAU BOROUGH
JUNEAU
GLACIER BAY NATIONAL MONUMENT
GUSTAVUS
HOONAH
Cross Sound
PELICAN CITY
TENAKEE SPRINGS
ANGOON
GREATER SITKA BOROUGH
SITKA
KAKE
Frederick Sound
Strait
CANADA
U.S.A.
N
E
S
W
ALEXANDER ARCHIPELAGO
PACIFIC OCEAN
TONGASS NATIONAL FOREST
FORRESTER ISLAND NATIONAL WILDLIFE REFUGE

FIGURE V - 69


CURRENT LAND STATUS
(June, 1968)
SOUTHEAST REGION
State Selections
Selected only
Tentatively approved
Patented
Bureau of Land Management
U. S. Fish and Wildlife Service
U. S. Forest Service
National Park Service
Bureau of Indian Affairs
Compiled for:
Alaska Natives & The Land
by the
FEDERAL FIELD COMMITTEE
FOR DEVELOPMENT PLANNING IN ALASKA
From all authoritative sources
50
0
50 MILES
KY NATIVE RESERVE
CHILKAT NATIVE RESERVE
PORT CHILKOOT
GREATER JUNEAU BOROUGH
JUNEAU
HOONAH
TENAKEE SPRINGS
ANGOON
SITKA
KAKE
Frederick Sound
PETERSBURG
WRANGELL
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TONGASS NATIONAL FOREST
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FORRESTER ISLAND NATIONAL WILDLIFE REFUGE
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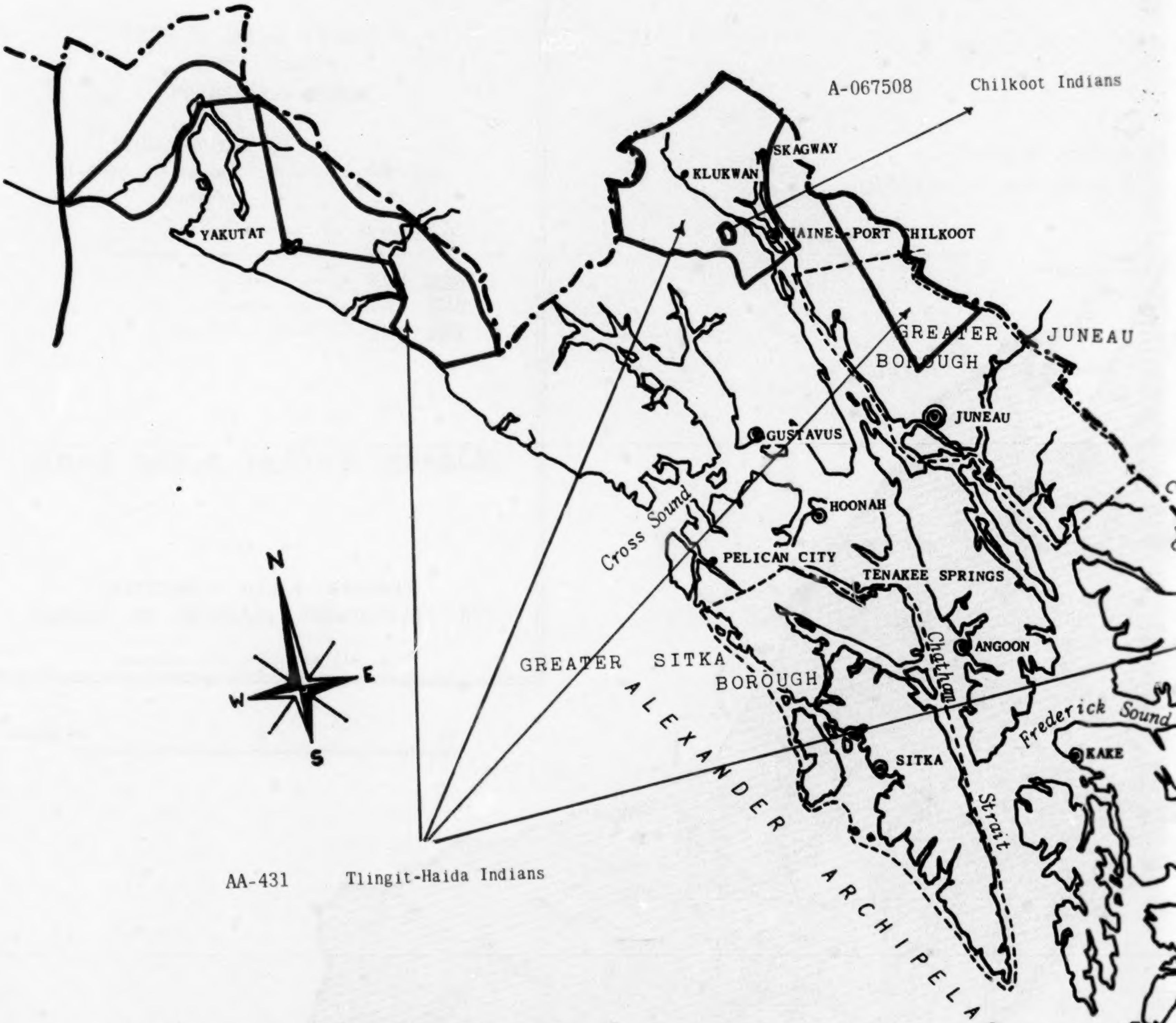
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A-067508 Chilkoot Indians

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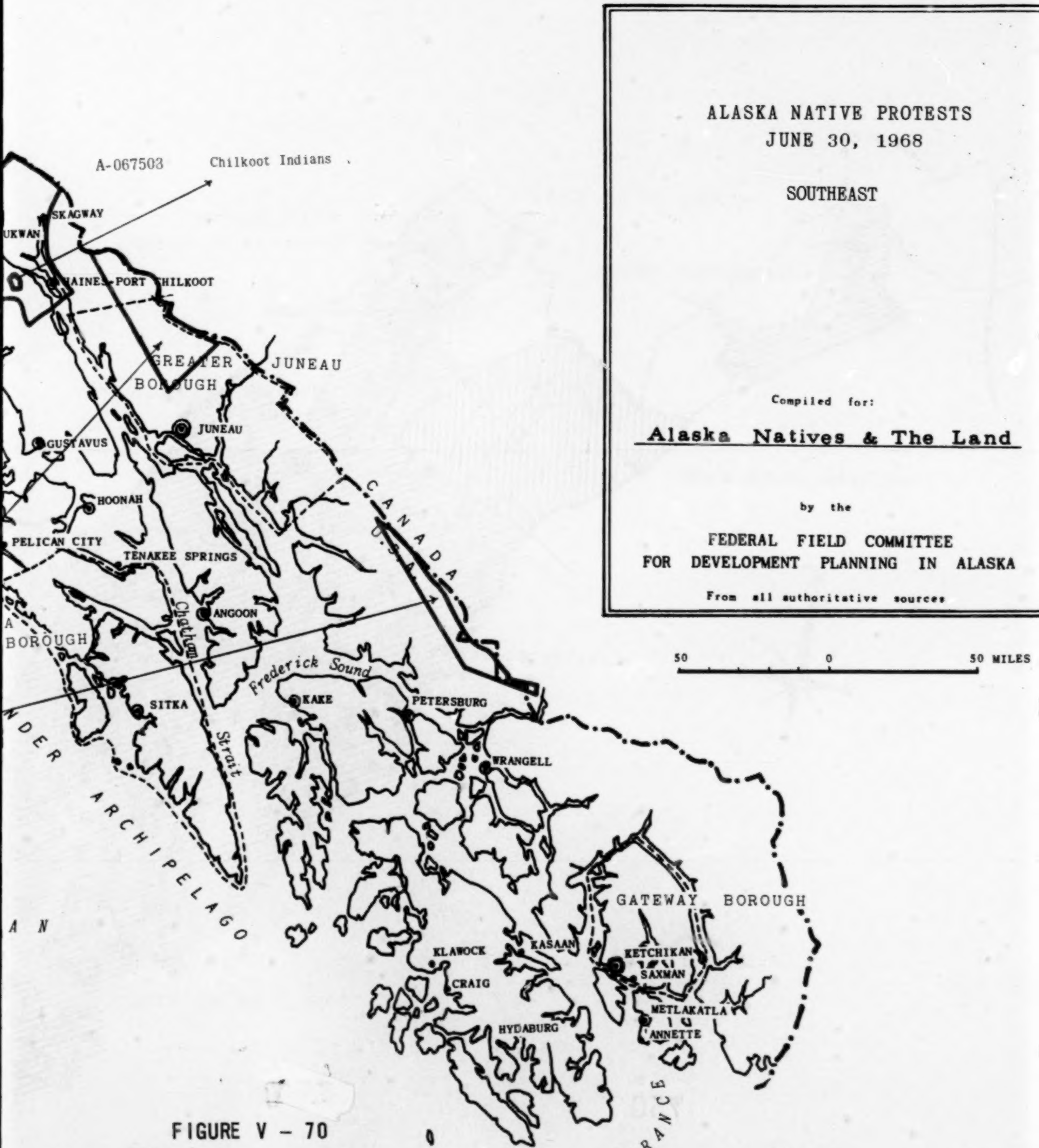
FIGURE V - 70



ALASKA NATIVE PROTESTS
JUNE 30, 1968

SOUTHEAST

Compiled for:

Alaska Natives & The Land

by the

FEDERAL FIELD COMMITTEE
FOR DEVELOPMENT PLANNING IN ALASKA

From all authoritative sources

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FIGURE V - 70

THE LAND CONFLICT

During the one hundred years of ownership of Alaska the United States, through the Congress, has periodically made the promise that the aboriginal use and occupancy of the Eskimos, Aleuts and Indians would be settled by some future Congress. The most recent expression of that promise was made ten years ago when Alaska became a state. The Statehood Act, however, made another promise--this time to the State of Alaska--that from the public lands of nearly 375 million acres, the state might select lands sufficient to give the state a total ownership of nearly 105 million acres. This recognized the fact that the state was new, not only politically but economically, and needed to achieve full equality with other states in practical economic, as well as political, terms.

From the vastness of Alaska it would not seem too difficult to fulfill both promises and still retain a sizeable federal domain. But it is a difficult and demanding decision. There are as many different sets of conflicts as there are regions of the state and interested parties.

Most conflicts between Native claims and state land selections come in the areas of potential major development. In the relatively undeveloped parts of the state where most Native villages are located, there is not as much conflict between the state and Native land claims, as a comparison of acreages would indicate. This is true as long as the claims are confined to surface rights. Because the state shares in 90 percent of the revenues from mineral leases on federal lands and 100 percent from state lands, the interest of the state is greater in the undeveloped areas when these revenues are threatened.

A general dividing line between areas where the state's interest is in both the surface and the minerals and the area where the chief interest of the state is in mineral rights only is the PYK line (named for the Porcupine, Yukon, Kuskokwim Rivers), established as a defense line in the Statehood Act. Beyond this line, the state could not select lands without approval of the Department of Defense and of the Secretary of the Interior. Further indication of less than immediate interest in the area by the state was the State Native Land Claim Settlement Act, passed in March, 1968. The Act set out boundaries beyond which the state agreed to make no selections for a period of eighteen months. As may be seen in Figure V-71, these lines carve out an area in the heartland of Alaska where most of the presently economically viable lands of the state lie. It has been estimated, by the Department of the Interior, the no more than 40 to 60 million acres are worthy of selection by the state at this time without regard to mineral interests.[116] No similar estimates have been made by the state. Even before the cessation of title transfers in November, 1966, the state was proceeding carefully in the selection of lands.

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[116] Report of the Department of the Interior to the Public Land Law Review Commission.

[117] United States Department of the Interior, Report from Assistant Secretaries to the Secretary, June 1, 1967, p. 25. *Alaska Natural Resources and the Rampart Project.*

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Even more difficult than the resolution of conflict between state selections and Native claims and protests are the hard choices posed where the biotic resource of lands is needed by Natives for their subsistence within areas withdrawn by the federal government for other than Native purposes. The withdrawal for the reservoir for the proposed Rampart hydroelectric project is a good example.

> The Rampart reservoir would inundate the hunting and fishing areas of nine villages in the Yukon Flats area. These villages have a native population of about 1,200 persons, which by 1990 should total about 3,000 persons. Seven of these villages would be inundated. In addition, the livelihood of some 5,000 to 6,000 natives residing elsewhere in the Yukon River Basin would be affected by the reduction of salmon runs in the Yukon River which would result from the construction of the Rampart Project. These natives all draw their subsistence primarily from local natural resources, supplemented by cash income from sale of furs, welfare, and sporadic wage employment.[117]

In some withdrawals, such as Petroleum Reserve No. 4, it appears that use of the surface resource would not be incompatible with the oil and gas development purposes for which the Reserve was created. We have not attempted herein to make an assessment of the merits or demerits of all federal reserve within Alaska. We have endeavored, however, in this report to set forth the background which the Congress and the Public Land Law Review Commission might find useful in making such judgments.

There are also conflicts among Native groups which will have to be resolved from historical and anthropoligical data available to those determining the extent and location of each grant of land. Conflicts in use and claims vary from area to area. In detail, the land issue for each area is set out in the foregoing section. However, three general divisions may be made:

....In southeastern Alaska there are no longer large areas of unappropriated public land from which Native claims may be satisfied. All but 2.6 million acres of "Indian title" lands of the Tlingit and Haidas were appropriated many years ago at the time the Annette Island Reserve was formed, at the time Glacier Bay National Monument and the Tongass National Forest were withdrawn.

....In southcentral Alaska lands are now in the process of being taken through state selections. These are the lands valuable for human habitation, hunting, fishing and recreational use, for urban community expansion. Some federal withdrawals conflict with Native use in this area; but, by and large, the conflict is with state selections and the entries and applications of non-Native citizens of the state.

> ....Except for the large federal withdrawals of Rampart, Arctic Wildlife Reserve and Naval Petroleum Reserve No. 4 (these three total over 40 million acres), there is little present conflict to the surface use of lands in the north and west. Large grants of land, in fee, in these areas, however, would create a conflict between claimants and the state.

The range and depth of conflicts make apparent that one, simple, across-the board solution is not possible. Solutions which imaginatively respond to the varying needs and objectives of all the Native groups, the state and the Nation are required. The land issue is less whether the aboriginal title of Alaska Natives should be recognized than how the elements of solution are applied to the elements of the problem.

That more than the satisfaction of a right in the lands or meeting the needs of one-fifth of Alaska's population is at stake is apparent in a careful analysis of the economic potential of the resources of Alaska and the effect of the Native protests and claims on the economic development of Alaska. These present and projected effects of failure to settle the claims give the problem its urgency.

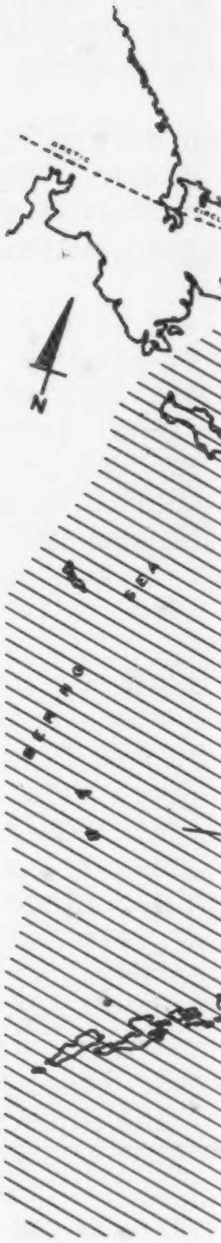

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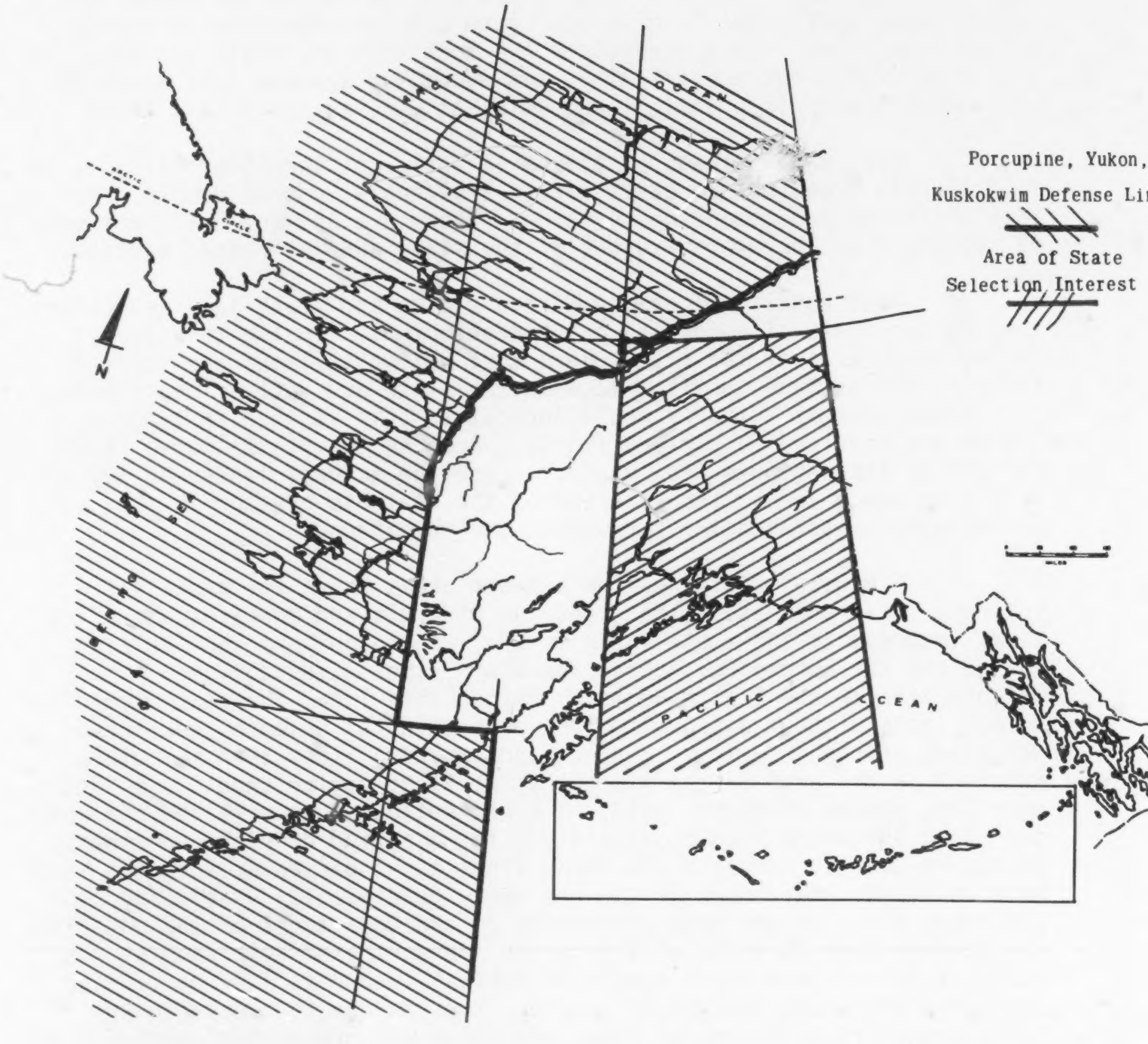
FIGURE V - 71

PORCUPINE-YUKON-KUSKOKWIM DEFENSE LINE
AND STATE SELECTIONS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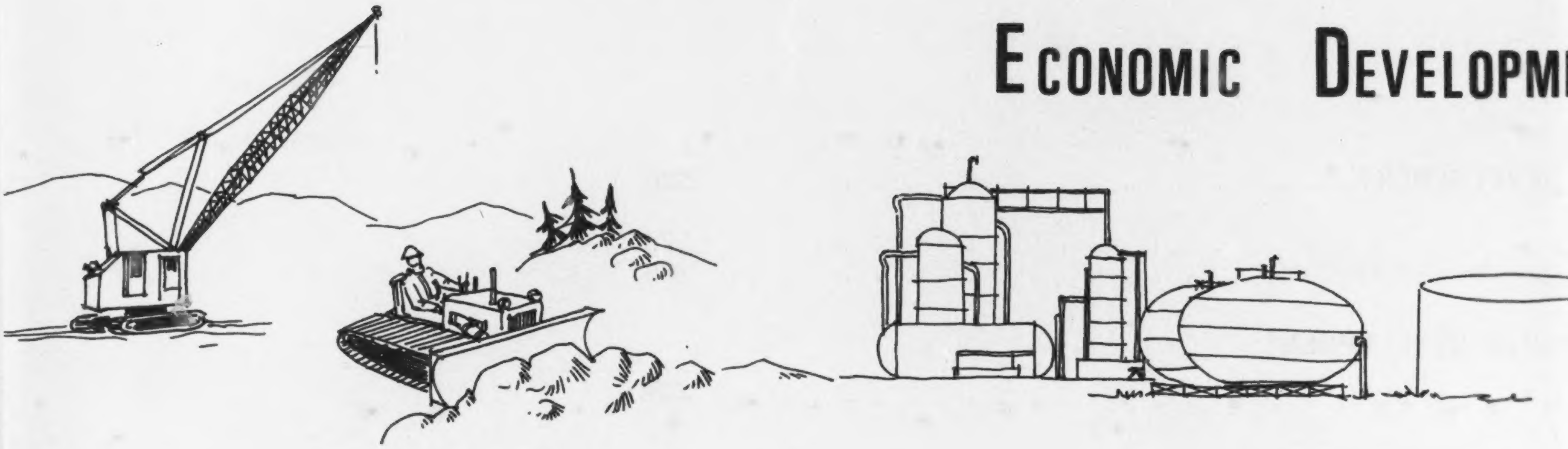
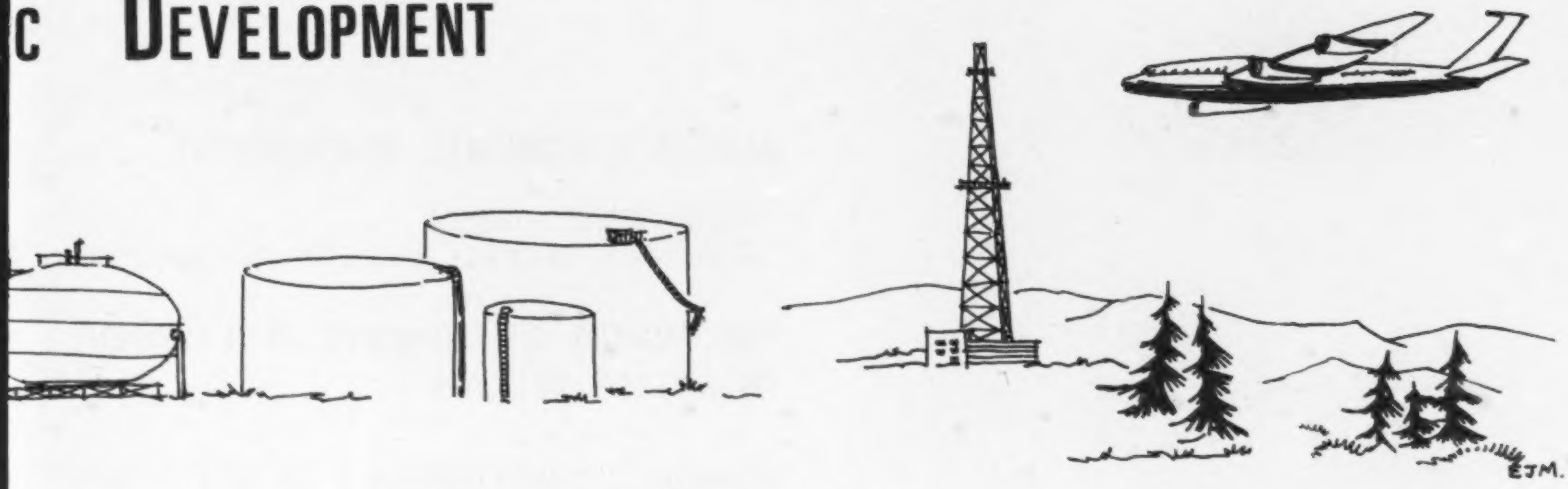


CHAPTER VI

C DEVELOPMENT



Arlon R. Tussing & Douglas N. Jones

930

CHAPTER VI

TABLE OF CONTENT

ALASKA'S ECONOMIC DEVELOPMENT . . . .

SUBREGIONAL ASPECTS . . . .
GOVERNMENT AND OIL INDUSTRY PERCEPTIONS . . . . . .

THE IMPACT OF ECONOMIC DEVELOPMENT ON NATIVE WELFARE . . . .

ECONOMIC CONSEQUENCES OF SETTLEMENT . . . . . .

PROTECTION OF SUBSISTENCE RESOURCES . . . .
GRANTS OF HOMESITES, TOWNSITES, AND SPECIAL-PURPOSE L
INDIVIDUAL LAND GRANTS . . . .
LAND GRANTS TO NATIVE CORPORATIONS OR NATIVE ASSOCIAT
INDIVIDUAL LUMP-SUM SETTLEMENTS . . . .
INDIVIDUAL CASH ANNUITIES . . . .
CASH SETTLEMENTS TO NATIVE ASSOCIATIONS OR CORPORATIO
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Grateful acknowledgment is made to the principal contributions of Messrs. Clyde S provided additional technical assistance in the economic analysis for particular regions of gathering information pertaining to the petroleum industry and the current "land freeze" in are those of the staff of the Federal Field Committee and do not necessarily reflect those

CHAPTER VI

TABLE OF CONTENTS

IC DEVELOPMENT **520**

TS 522
L INDUSTRY PERCEPTIONS 525

CONOMIC DEVELOPMENT
RE **528**

UENCES OF SETTLEMENT **529**

SISTENCE RESOURCES 529
ES, TOWNSITES, AND SPECIAL-PURPOSE LOCATIONS 529
RANTS 529
TIVE CORPORATIONS OR NATIVE ASSOCIATIONS 530
UM SETTLEMENTS 530
NNUITIES 530
TO NATIVE ASSOCIATIONS OR CORPORATIONS 530
FROM PUBLIC LANDS (AND/OR OUTER CONTINENTAL SHELF). . . . 531
. . . . 531
ATION, TRUSTEESHIP, AND PROPERTY ALIENATION 531

al contributions of Messrs. Clyde S. Courtnage, Hubert J. Gellert, and Thomas J. Smythe, who
analysis for particular regions of Alaska, and to Mr. D. L. Simasko for his assistance in
try and the current "land freeze" in Alaska. Any conclusions or inferences in the text, however,
d do not necessarily reflect those of contributing agencies or individuals.

ECONOMIC DEVELOPMENT

The meaning of the Native protests for economic development in Alaska is necessarily a central issue in their resolution. There is hardly any aspect of the general problem of the protests which is the subject of deeper and more persistent controversy. One source of conflict is the fact that the notion of economic development holds *different meanings* for different groups. To some it means factories, to others the commercial use of land resources, and to still others a self-sufficient homestead. The question in other terms is *whose* economic development is to be fostered.

Another difficulty is that even if the meaning of economic development can be agreed upon there are differing views as to its *proper measurement*. Typically, the measures are changes in employment and income. But the *distribution* of these gains--the labor force and population base against which they are measured--is equally important. Alaska Natives cannot be expected to feel a stake in a pattern of economic growth in which the new jobs are almost exclusively filled by white in-migrants. Other less direct, but no less important, quasi-economic tests might be used if other values--say, the political and psychological dimensions--are given emphasis. In this case, a wider distribution of land ownership and a greater feeling of participation in one's economic affairs might be the desired change.

A final problem is that of the *time frame* which is chosen for evaluating the economic consequences of development however defined and however measured. Is it a short-term, intermediate-term, or long-run time horizon that is the backdrop within which we progress? Economic development is, after all, a process; and this implies that longer-term gains later on may come at the expense of short-term gains now. Conflicts arising from different time horizons are not resolved simply by
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choosing a single "rate of discount" by which the present and the future can be compared. Such a procedure may be meaningful for the state or for a large corporation which can borrow or lend on the basis of future expectations, but it is meaningless to people without commercial assets or commercial attitudes.

The burden of analysis of the economic implications of the Native protest and the attendant claims legislation involves at least four tasks, and these are the ones around which the subsequent writing centers. These are:

....To summarize the most important features of Alaska's economy and recent economic development;

....To discover whether or not corporate or governmental behavior has been different as a *result* of Native protest and whether such different behavior has had an effect on economic development in Alaska; and to indicate whether or not sustained, unresolved controversy on the issue would affect economic development in Alaska;

....To evaluate the implications for Alaska Natives of the most likely patterns of regional economic development; and

....To appraise the likely effects on economic development of various possible legislative provisions.

ALASKA'S ECONOMIC DEVELOPMENT

One of the most important points to understand about the Alaska economy is its *enclave* or insular character. Population and productive activity are mostly concentrated in a very few locations at tidewater and in a narrow belt about 100 miles long, stretching from Palmer to Kenai, and centering in the city of Anchorage.

Economic activity is even more concentrated than population, both spatially and sectorally. The proportion of all employment in the state contributed by all commodity-producing industries is extremely low. A table showing Alaska's gross domestic product for 1965 (Figure VI-1) shows the particularly undeveloped and unbalanced nature of the economy in more striking detail. Less than 1 percent of the product came from agriculture, forestry, and fisheries combined; and mining accounted for less than 4 percent of the total, despite the fact that it is for the latter two industries that Alaska is most noted.

Manufacturing, including the processing of primary products (fish packing, lumber and pulp manufacture, etc.), and the so-called support industries (like baking, soft-drink bottling, and printing and publishing), contributed 8 percent of value added. Commodity production in its totality, then, made up only about one-eighth of the total volume of activity in Alaska's economy.

On the other hand, government employment alone was directly responsible for well over one-third of Alaska gross income and product; and government activity alone accounts for about two-fifths of all employment and for about half of all wage and salary payments in Alaska. In addition, the activity of the service sectors of the private economy and of construction ultimately depends largely upon the income injected into the state from government expenditures. Government must ultimately account for substantially more than half of all economic activity in Alaska.

The large role played in Alaska's economy by the federal government, and particularly by defense activities and defense construction, together with the relatively small role of the state's resource industries, is *not*, however, representative of the forces for growth in the state. As shown in Figure VI-2, the gross value of product in Alaska's extractive industries about doubled between 1960 and 1966.

Figures on *investment* rather than production would show an even more spectacular contrast and lead to the conclusion that it was oil and gas and their derivatives above all--exploration, development, and processing, as well as production--which are now the main

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FIGURE VI-1

ALASKA GROSS PRODUCT, 1960-1965
(Millions of Current Dollars)
(Italics denote percent)

	1960	1961	1962	1963	1964	1965
Agriculture, Forestry and Fishery	4.3 *0.6*	5.7 *0.8*	6.3 *0.8*	5.2 *0.6*	5.8 *0.6*	8.3 *0.8*
Mining	28.3 *3.8*	34.4 *4.6*	38.8 *4.8*	37.2 *4.5*	36.2 *3.9*	38.3 *3.7*
Contract Construction	98.9 *13.2*	64.1 *8.7*	64.8 *8.4*	69.2 *8.4*	105.3 *11.2*	117.5 *11.4*
Manufacturing	65.4 *8.8*	58.0 *7.8*	61.0 *7.9*	65.1 *7.9*	68.7 *7.3*	82.3 *8.0*
Transportation	45.0 *6.0*	42.7 *5.8*	45.0 *5.8*	47.6 *5.8*	52.6 *5.6*	56.4 *5.5*
Communications	34.2 *4.6*	59.8 *8.1*	55.1 *7.2*	55.5 *6.7*	53.0 *5.6*	55.0 *5.3*
Electric, Gas and Sanitary Services	9.4 *1.3*	11.0 *1.5*	13.8 *1.8*	15.7 *1.9*	18.2 *1.9*	21.0 *2.0*
Wholesale and Retail Trade	85.2 *11.4*	96.1 *13.0*	95.3 *12.4*	100.2 *12.1*	109.3 *11.6*	126.1 *12.3*
Finance, Insurance and Real Estate	42.6 *5.7*	44.8 *6.0*	51.1 *6.6*	58.4 *7.1*	66.6 *7.1*	77.4 *7.5*
Services	42.6 *5.7*	44.8 *6.0*	50.4 *6.5*	51.4 *6.2*	66.9 *7.1*	74.5 *7.2*
Government and Government Enterprise	290.8 *39.9*	279.8 *37.7*	291.0 *37.8*	321.0 *38.8*	369.9 *38.2*	372.2 *36.2*
Totals	746.8 *100.0*	741.2 *100.0*	770.7 *100.0*	826.5 *100.0*	942.1 *100.0*	1029.5 *100.0*

Source: Bradford H. Tuck, *An Aggregate Income Model of a Semi-Autonomous Alaskan Economy*, prepared for the Federal Field Committee for Development Planning in Alaska, Anchorage, 1967, p. 68.

FIGURE VI-2

GROWTH IN COMMODITY INDUSTRIES
BY VALUE OF PRODUCT
(Millions of Dollars)

Industry	1960	1961	1962	1963	1964	1965	1966
Fisheries	$ 96.5	$128.7	$126.5	$104.7	$125.0	$166.5	$185.0
Forest Products	47.3	44.7	49.7	50.1	58.0	57.5	67.8
Minerals	20.6	17.8	18.8	35.2	35.5	47.6[a]	34.7
Oil and Gas	1.3	17.0	28.4	32.7	35.5	35.6	50.2
Agriculture	5.4	5.5	5.8	5.5	5.6	5.2	5.5
Furs	4.8	4.2	4.3	4.4	4.4	5.8	7.0[b]
Total	$175.9	$217.9	$233.7	$232.6	$264.0	$318.2	$350.2

[a] Reflects post-earthquake construction.

[b] Largely an increase in unit prices.

Source: Alaska Development Corporation, *Annual Report*.

engine of economic growth in Alaska. The discovery in 1968 of what appears to be the biggest oil field in North America certainly does not modify this judgment.

There has also been an expansion of Alaska-based fisheries operations, formerly concentrated almost wholly on salmon, into other species such as king crab, shrimp and scallops.

Logging, pulp manufacture, and the cutting of roughly squared lumber for export to Japan have also expanded substantially so that by the fall of 1968 almost two-thirds of the state's allowable timber cut had been committed to production.

It cannot be too heavily emphasized that the above three resource groups--oil and gas, fish and timber--and their processing are now, together with tourism, the state's *only* basic growth industries and that the benefits from their growth are distributed exceedingly unevenly within the state. The growth of these resource-based

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activities has, of course, greatly stimulated the growth of supporting manufactures and services and of state and local government; but it is only mildly exaggerating to say that this growth of the "infrastructure and superstructure" has occurred entirely in the Anchorage-Kenai area.

On the whole, this concentration--indeed urbanization--has been beneficial to Alaska's overall development. It has reduced costs through economies of scale and through greater competition and has provided the Anchorage area with virtually all of the amenities of modern urban life. The developments of the last decade have, in addition, reduced the relative amplitude of seasonal fluctuations in income and employment.

This growth has, however, meant little to most Alaska Natives. There has been some influx of Natives into the urban centers, but most Natives still live in small villages apart from the continental land transportation network and almost totally outside the mainstream of the economy.

Even more significant, however, is the *composition* of new employment. A comprehensive manpower and manpower-demand study of Alaska has yet to be done, but there is little doubt that the education and skill requirements for entry into the jobs being created by economic growth in Alaska are, on the average, exceptionally high, and are rising year by year. This circumstance was reflected already in the 1960 census by Alaska's median educational attainment for whites of 12.4 years compared with 10.9 for the United States as a whole.

The leading growth industry--oil and gas--is one of the most capital intensive and technology intensive of all commodity-producing industries and employs almost no unskilled or semi-skilled labor.

Alaska's economic growth is expected to continue at a rapid pace along its present lines, and some of the most serious problems of economic backwardness and isolation (for instance, high prices and costs, and violent seasonal fluctuations) may be effectively mitigated in the urban core over the next few years. But it would not be surprising if this development took place without adding at all to the number of jobs which can be filled by persons without at least the equivalent of a high school education.[1]

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[1] This is not to say that there will not be *any* new jobs created at minimum entry levels. The point is that any new positions of this type may well be more than offset by the disappearance of unskilled and semi-skilled jobs in declining industries or trades, and resulting from automation, modernization, and upgrading of work in general. Under these circumstances, programs to place additional Natives in minimum-entry jobs may succeed only to the extent they *redistribute* unemployment rather than alleviate it.

Subregional Aspects

The important economic aspects of each of Alaska's five subregions, defined in Figure VI-3, as they touch on the Native protests, are considered below.[2]

Region I--Southeastern Alaska

The economy of southeastern Alaska is heavily dependent on government and distributive activities; virtually the state's entire timber industry and a large proportion of fishing activity are also based in the region. Commercial fishing is the most important occupation of the Native people, and the subsistence economy is less important here than it is elsewhere in the state.

Because the bulk of the productive land in the region is national forest land, and because at least a partial resolution of the claims of the Haida and Tlingit Indians has already been achieved judicially, the "land freeze" has little effect here.

Region II-Southcentral Alaska

Southcentral Alaska comprises the economic heartland of the state. With the state's largest city, about half its population, virtually the entire oil and gas industry, and the bulk of its fishing industry, any action related to Native claims which affects the magnitude and pace of economic activity in this region cannot help but have a significant effect on the total economic and fiscal strength of the state. The effect of the "land freeze" on the oil and gas industry is treated a few pages hence; we take up here its impact in other fields.

The whole of the Chugach National Forest lies within the bounds of Region II. The estimated allowable cut for the Chugach is 67 million board feet. Only a fraction of this has been cut. In the opinion of the U. S. Forest Service, the national forest will be unaffected by Native land claims. In large part this view stems from the fact that the present Native claims legislation does not contemplate disturbing the national forests. The Congress could, of course, make a different settlement. The Statehood Act provides that communities may, for purposes of expansion, select "....from lands within national forests in Alaska which are vacant and unappropriated at the time of their selection not to exceed four hundred thousand acres of land...." So far the state has made requests amounting to fewer than 40,000 acres under this provision.

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[2] The regional subdivision of Alaska used here is that prepared for the Federal Field Committee's *A Subregional Economic Analysis of Alaska*, Anchorage, September 1968, which study provides a detailed description, analysis, and projection of the economies of the respective subregions. The generalizations in this chapter are in large part based upon the analyses in that work.

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The State of Alaska has received tentative approval for its selected timber lands on the Kenai Peninsula, Shuyak Island, the Susitna Valley, and the Yakataga area. Major state sales include 96 million board feet on the Kenai and 100 million in the Susitna Valley. A sale in conjunction with a U. S. Forest Service sale was planned to include 100 million board feet of state timber on Shuyak Island, but was not consummated. Within a year the state expected to offer the Yakataga timber for sale. Estimated allowable cut there is about 29 million board feet per year.

Unless present policy is changed, the state will not receive approval on any further timber land selections that it might make until the land claims have been settled.

The areas mentioned above should provide adequate inventory from the present to at least two years hence. When the time period three to six years is reached, the land claims may well have an effect. By that time, cutting on sales which have already been made may be in full swing. Some additional demand could be met by further sales on land the state now controls. Should the resource be seriously depleted, however, it is quite possible that potential buyers would look to national forest timber for supply where they might normally have sought out state timber.

The major land selection which would be delayed by the land claims is the Copper River Valley area The Bureau of Land Management is presently surveying and classifying this land area. It is understood that the state would like to select this land in about five years.

As to the Alaska Peninsula and the Aleutian Chain areas, it is concluded that there is no appreciable effect of the pending Native land claims legislation. It did not deter investment in plant and equipment during the past two years, nor did it have an effect on the recent sale of the Dutch Harbor property by the General Services Administration; although these properties are outside the delineated land claims.

People in the fishing industry do not seem concerned. They are far more concerned about the fisheries resource than they are about lands on which to establish plants. It is anticipated that lands would be made available to the fishing industry, taking into consideration impending land claims, as long as they offered employment.

Other problems such as townsite planning, the use of wildlife refuges, and the relationship and use of military lands appear to play a greater role than do Native land claims in this area.

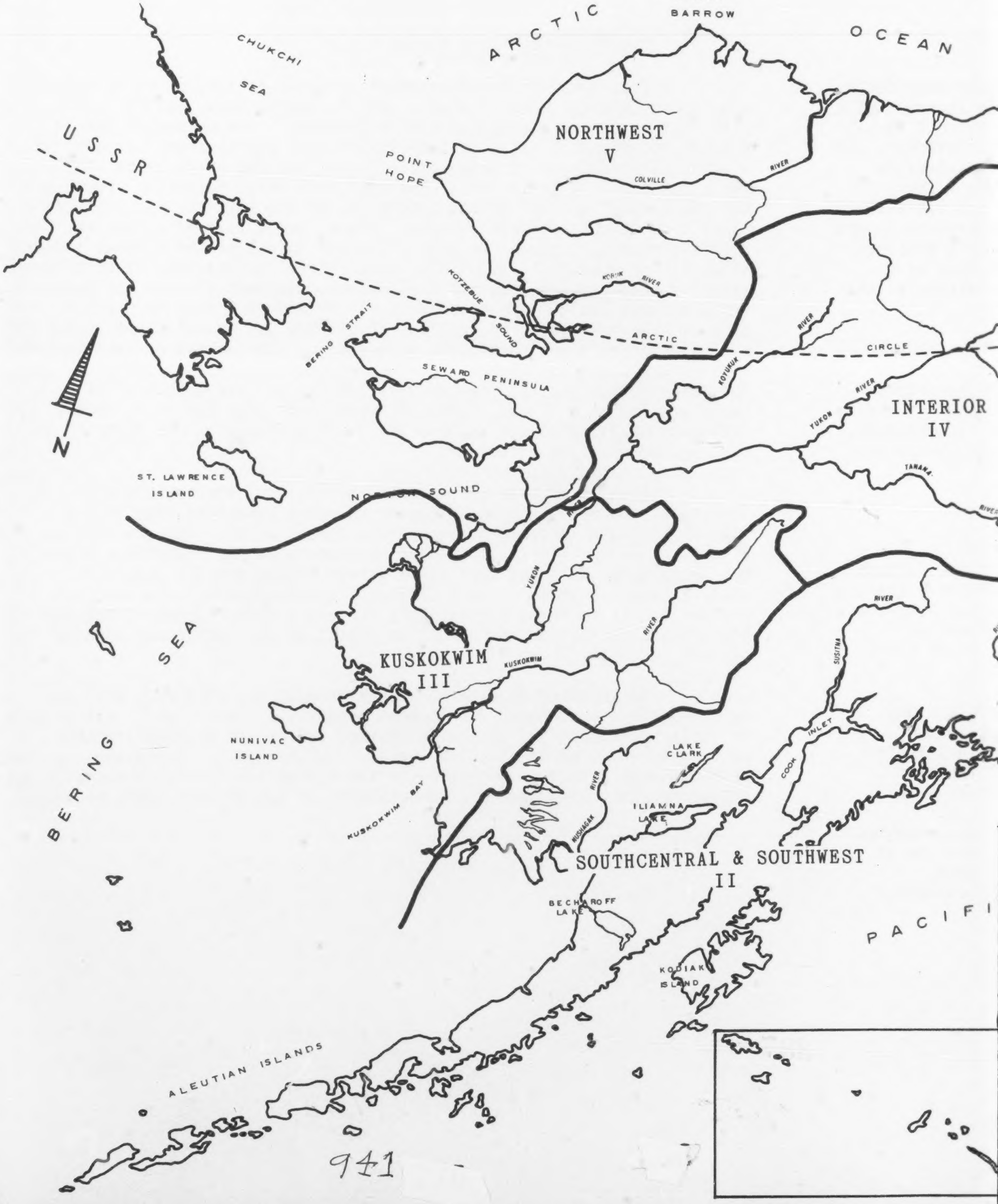
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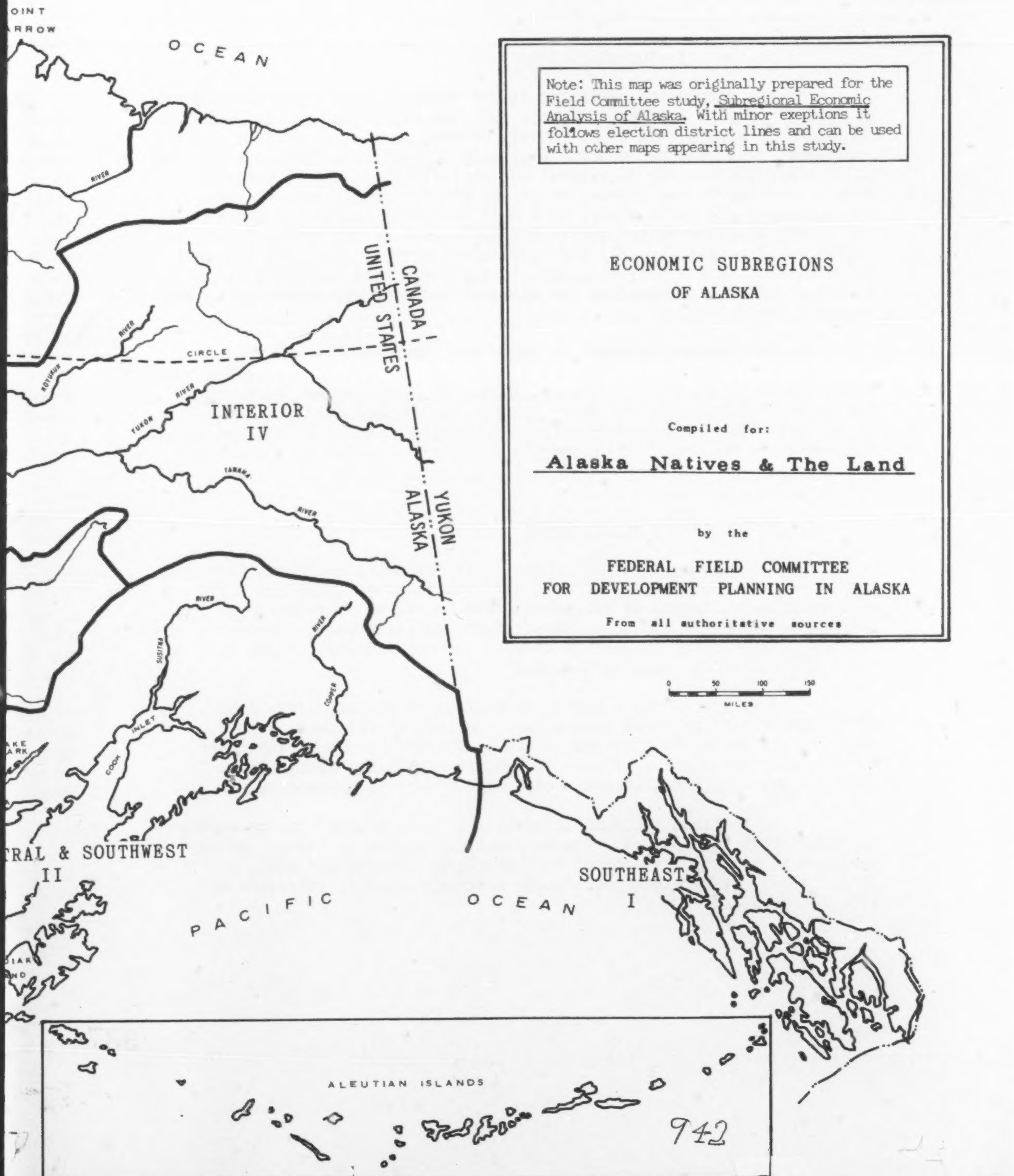
FIGURE VI - 3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Note: This map was originally prepared for the Field Committee study, Subregional Economic Analysis of Alaska. With minor exeptions it follows election district lines and can be used with other maps appearing in this study.

ECONOMIC SUBREGIONS
OF ALASKA

Compiled for:

Alaska Natives & The Land

by the

FEDERAL FIELD COMMITTEE
FOR DEVELOPMENT PLANNING IN ALASKA

From all authoritative sources

942

FIGURE VI - 3

Region III--Kuskokwim Area

The population of Region III is about 13,000, about nine-tenths of whom are Alaska Natives. Bluntly put, the region has no apparent base for economic growth. It has a rapidly growing population without local employment prospects and generally without the cultural, educational, and skill prerequisites for successful out-migration. In the foreseeable future, outside of the conversion of the present subsistence fishery in the Kuskokwim and Yukon rivers to a more efficient commercial operation, any growth of opportunity either for employment or for enterprise in the region, will result directly from government action. The only prospect for expansion of the public sector, in turn, can be anticipated as a result of efforts to overcome the cultural and economic handicaps of the region's population.

No instance is known in which the "land freeze" has hindered, delayed, or prevented any economic development project in the region. There can be no assurance, however, that a prolongation of the freeze for several years would not deter programs which depend on acquisition of mineral title or on timber sales. It should be pointed out, however, that there is no immediate prospect for action in either area under any circumstance.

Region IV--Interior Alaska

The economy of interior Alaska is concentrated in the Fairbanks area and is dominated by government and distributive activities. The only conspicuous source of economic growth in recent years has been the University of Alaska and a government-technical-scientific complex growing up around the University campus. Mining and agriculture have minor and declining roles in the area.

Interior Alaska's Native population is approximately 6,500, or 13 percent of the total population. Outside of Fairbanks proper, most Natives are still attached to the subsistence economy; and their most conspicuous sources of cash income are occasional construction work and government employment together with welfare payments.

No instance is known in which the "land freeze" has prevented any commercial development. Its continuation would, of course, be an obstacle to mineral development in this highly mineralized area, assuming, of course, that significant discoveries would otherwise be made and produced.

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Region V--Northwest Alaska

This area, with a population of about 12,300, of which about nine-tenths are Eskimos, is almost totally undeveloped; but it is the site of the recent spectacular oil discoveries. The potential for economic development rests largely in minerals and tourism. At present, no mineral production is being carried out, but the North Slope as a whole may turn out to be one of the world's richest petroleum provinces, and the general geology of the Brooks Ranges suggests the possibility of major developments in metallic ores. Actual production of either is unlikely within four or five years, and the future of the mineral industries in the area is still highly speculative. In the present primitive state of mapping, surveys, and exploration, statements about the region's "vast mineral wealth" are prophesies of the faithful more than assertions of fact. Nevertheless, indications of oil and gas and of other commercial mineral prospects are sufficient to encourage substantial private investment in exploration. Discounting for the uncertainties of discovery and eventual production, the present value in the private market of all petroleum and natural gas rights on North Slope land yet to be leased, including Naval Petroleum Reserve No. 4, is probably in the order of hundreds of millions of dollars.

Even in advance of possible production, the exploration investment in Region V and the public revenues generated from leases will be enormous in resident *per capita* terms, as will the gross value of product and public royalties and revenues when any production begins. But these flows will not generate a direct demand for the labor of local Eskimos *at their present levels of acculturation, education, and skills,* and in conformity with their present customs of employment and livelihood, so that the constructive impact on the indigenous economy may not be great.

No instance in which the "land freeze" has hindered, delayed, or prevented any economic development project has been found. All present or anticipated programs are being carried out or are planned offshore, on private land, or on existing leases or withdrawals. There can, however, be no assurance that prolongation of the freeze for several years will not deter programs which depend on acquisition of new mineral title or leases.

Government and Oil Industry Perceptions

Perhaps as important as whether or how the fact of Native protest or the provisions of the attending legislation "should" have implications for the economic development of Alaska is how decisional parties--governmental and corporate--*perceive* implications to the protest and claims. Two quotations are representative of the state's view. The Alaska Division of Lands recent annual report contains the remarks:

> The state's land selection program continues to be restricted by a federal policy of refusal to take final action on lands which are under recorded native land claims. There are now 40 such claims. They cover most of Alaska's 365 million acres, and because of overlapping, total more than the state's entire acreage.
>
> The Interior Department's policy of "no final action" means that tentative approval is not granted on state selections, and without tentative approval the state has not been able to assume management of the selected land. This, of course, means the state is not able to proceed as rapidly as desired in moving land into the hands of private ownership.[3]

In this last connection it should be pointed out that Interior's "policy" derives from the Administrative Procedures Act which requires a *finding* on protested government actions and is therefore not to be viewed as arbitrary and capricious.

In the same publication, the section on oil and gas leasing activity contains the observation:

> The decision of the federal government to suspend issue of leases in cases where the land is under native claim has had a definite adverse effect on rental revenues to the state. Alaska is entitled to 90 per cent of oil and gas lease revenues, but the total revenue continues to decline because expiring leases are not renewed and new leases are not issued. The rental income to Alaska from

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[3] *Alaska Division of Lands 1967 Annual Report,* State of Alaska, Department of Natural Resources, Anchorage, Alaska, pp. 9-10.

> federal oil and gas leases topped $4 million in 1966, but dropped to $3,526,398.20 in 1967.[4]

Less conclusive is the University of Alaska's recent analysis of the impact of the "freeze." The University publication states:

> Actual effect of the freeze on future oil and gas development is open to conjecture. Presently the freeze is stimulating drilling on some federal leases, especially the Alaska Peninsula. This increased activity has resulted because the federal leases in this area will be the first to expire and oil companies want to eliminate these areas from their list of prospects before the expiration dates do so automatically. If production is developed on a federal leasehold, the lease is automatically renewable and therefore not subject to the restrictions of the freeze. Present indications are that the only districts in which oil company activity is actually slowing down are the Copper River Basin and along the Gulf of Alaska shoreline--and activity in these areas may have slowed without the freeze. However, if the freeze continues over a period of years, gaps will occur in potential drilling blocks in these and other areas that could depress future explorations in Alaska.[5]

It is notoriously difficult to get "the industry view" of any issue on the Alaska petroleum scene. This is not usually a matter of secretiveness on the part of the industry but more frequently a recognition of the fact that individual members (and, indeed, individuals within a single company) have quite divergent views on most questions at issue. In an effort to get some insight into what some members of the oil and gas industry see as the effect of Native protest on their activities, a group(35) of "landmen" responsible for advising their corporations on land availability, leasing and acquiring rights, negotiating land contracts, and the like was contacted. The questions posed each member and the distribution of responses follow:

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[4] *Ibid.*, p.4.

[5] Judy Brady, "Native Land Claims," *Alaska Monthly Review of Business and Economic Conditions*, Vol. IV, No. 6 (November, 1967), University of Alaska, Institute of Social, Economic and Government Research, pp. 8-9.

Question: What effect, if any, has the Native land protest (and the "land freeze") had on your company's behavior in Alaska?

Sixty-two percent of the respondents advised that the land freeze had an adverse effect on their company's exploratory activities in Alaska. Thirty-one percent advised that the land freeze had no noticeable effect to date. Seven percent advised the question was not applicable to the company's operations.

Question: What effect could it have on your company's behavior in Alaska in the future?

Ninety-three percent of the respondents felt that the continuance of the land freeze would seriously limit and possibly halt their company's efforts in Alaska. Seven percent advised the question was not applicable to the company's operations.

Question: Do you believe the recent California lease activity on the part of the industry in any way involves committing corporate monies there that might have been directed to Alaska in the absence of Native protest and land freeze?

Fifty-three percent of the respondents advised that the land freeze did not affect their company's participation in recent California lease activity. Twenty-three percent advised that they felt their company spent more money at the recent California sale than they would have had they been otherwise committed in Alaska. Three respondents advised that they feel the land freeze has released exploration monies not only for use in California but in other areas in the United States as well. Seven percent of the respondents advised that there was little comparison between the recent Santa Barbara sale and oil activities in Alaska. They felt that their companies were purchasing known producing structures as opposed to attempting to delineate such oil fields in Alaska.

Within these generalized conclusions, several particular responses brought out the move to substitute exploration of Outer Continental Shelf lands in Alaska for onshore lands, the difficulty and cost of altering the five-year budget plans which typify the exploration process (on the point of forecasting corporate activity in foreign or other domestic areas), and the all-pervasive mood of uncertainty and instability they see as surrounding land matters.

Almost all comments from any source on the economic effects of Native protest cite the so-called land freeze as the central source of immediate difficulty. It seems fair to say that "the freeze" is looked upon by business as a much greater obstacle to development than cloudiness of land titles. This, of course, is understandable in that the freeze is explicit and certain and the ultimate resolution of ownership is quite unclear.

The freeze affects all land disposal cases situated in claim areas, including state selection; final action on homesteads, homesites, trade and manufacturing, power and airport sites, road rights of way; mining claims; and the like. The freeze does not directly affect federal lands already under lease nor does it affect state-owned lands, including tidal and submerged lands. Further leasing of federally administered lands and tentative-approval lands was stopped, however.[6]

The prevailing view of the actual and potential results of this paralysis is captured in the testimony of one former senior state official in the land field. He writes:

> ....The welfare of all Alaskans and the economic stability of the state itself is dependent upon accelerated rather than delayed development of the resources....[The] recent freeze on issuing oil and gas leases on land covered by native claims, has proven costly financially to the Federal and state governments. It promises to be far more costly in delayed resource development.[7]

Further, he concludes:

> Although the Federal government can tolerate delays resulting from decisions, cumbersome legal proceedings or from lack of appropriations, Alaska cannot permit such delays which often mean lost opportunity for securing commitments of development capital.[8]

On the face of it, one might imagine that the question of ownership of land--or, indeed, even the matter of land in disputed ownership--might not "make any difference" to the interested business party (for example, oil companies) as long as it was leaseable. But even here there are economic implications that turn on the nature and provisions of ownership. Lease payments would be 50 cents per acre per year with state ownership. Similarly, royalty payments would be at a rate of

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[6] Writing to this point, the University of Alaska analysis of Native claims includes the comment: "The history of leasing in Alaska has shown that 20 to 25 per cent of the federal leases are dropped or expire each year. These leases have been replaced by enough new leases to keep the level fairly stable. Under the freeze, with virtually no new federal leases being issued to replace those dropped, the acreage under federal lease has dropped from approximately 10 million in May of 1966 to about 7.8 million at the end of May 1967." *Ibid.*, p. 8.

[7] Testimony of Roscoe E. Bell, consultant to the Alaska Land Law Study team of the Public Land Law Review Commission and lecturer in natural resources, University of Wisconsin, on S-2906 in letter to Senator Henry Jackson, chairman of the committee holding hearings on the legislation.

[8] *Ibid.*

16-1/2 percent. The terms of leases under possible Native association ownership are today simply conjectural. Further, there is the question of the patterns of offerings, their frequency, size, and location, and how these might differ under varying ownership. Finally, the issue of the administrative and managerial skill levels and experiences under different ownership arrangements is probably viewed by most state and industry officials along the lines of the following quotation:

> Once the "freeze is lifted," mineral exploration and development can proceed promptly if established and tested laws and regulations are in effect.... If the mineral rights are transferred to native groups, development will unquestionably be delayed and discouraged simply because of the uncertainties attendant upon drafting and adoption of rules, regulations, and operating procedures. The significance of Alaskan mineral resource development justifies retention of the mineral rights by the Federal or state government or at least mineral management by the government agencies.[9]

It should be explicitly acknowledged, of course, that judgments about the character and quality of Native management of land resources that might be granted by legislative settlement are highly speculative. So long as land and mineral title is not so fragmented as to make rational management impossible, there is no reason to expect the quality of business talent engaged by Native groups to be inferior to that of the state. On the contrary, the management of Native investment corporations might be expected to be more single-mindedly devoted to maximizing the commercial value of their assets than would management agencies of the federal or state government, which face many more conflicting policy objectives and constraints.

There is another important dimension to the whole "supply side" of the equation that is generally discussed above. This is the behavior of government--state and local agencies and other federal agencies--in the face of Native protest, the Department of the Interior's "land freeze," and pending claims legislation. Here, too, the effects are several, with

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[9] *Ibid.*

varying degrees of impact on the orderly growth and development of the state. One is the conflict between claims legislation and land selection rights granted by the Statehood Act, i.e., given the fact that land suitable for selection is not unlimited in quantity, a large acreage grant to Native claims could reduce the amount of desirable land available for state selection.

A second and related item is the fact that the extensive existing federal land withdrawals around the state will be seen as increasingly desirable in the competition for land of value. Earlier withdrawals will very likely come under growing pressure for review and reclassification. This, of course, is quite consonant with the charge of the Public Land Law Review Commission.

A third effect is that agencies may well pursue their normal program in the land-management or related fields with less vigor than they otherwise would or may redirect their efforts away from some areas in favor of others on the basis of Native protests. Examples here might be found in airport facilities work, grazing permits, land classification, and wilderness and parks and recreation activities. Any relative retrenchment on the part of agency programs in a state where government is such a dominant phenomenon in the economy cannot have neutral effects.

A "demand analysis" of the issue points up several considerations. There is a danger of viewing corporate (and, perhaps, government) behavior in too narrow a context. It could well be the case that industry conditions of prices, markets, costs, and internal company concerns of budgets, cash flow, utilization of facilities, and substitute opportunities elsewhere may be more determinative of business behavior than the fact of Native protest and legislation--or at least the latter may be only governing at the margin. Then, too, there is the possibility that the Native protest may be used as a handy scapegoat--a ready explanation for busineses to taper off the level of their activities contemplated for other reasons.

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[9] *Ibid.*

THE IMPACT OF ECONOMIC DEVELOPMENT ON NATIVE WELFARE

It is a fair generalization from the foregoing chapters that Alaska Natives as a class are *not* owners of commercial property assets. Nor are they possessors of the acculturation, education, training, or experience to take advantage of the new job opportunities in the kind of economic growth now occurring in the United States and in Alaska. This generalization is confirmed by a variety of statistical series, which show that the economic position of Alaska Natives, and of the communities in which they live, is steadily falling further behind statewide averages.[10] It is a common notion that any obstacles to economic development resulting from the impasse over Native claims hurt the interests of Alaska Natives above all, but this is a serious exaggeration. On balance, it appears that Alaska Natives as a group now have little if any stake in a continuation of the present pattern of regional economic development. It follows also that they have little stake in a resolution of their protests and claims for the sake of removing obstacles to economic development, unless that resolution involves either the creation of *new kinds* of economic opportunity for individual Natives or Native groups or a substantial *transfer* of commercial assets to them.

The Native interest in economic development as it touches on a resolution of the protests can be subdivided into four concerns:

(1) Protection of the Indigenous Way of Life. Commercial development of Alaska's natural resources or the population growth it supports may endanger, or compete for, resources required in the subsistence economy. Native groups seek land title to increase their control of, and ability to protect, these subsistence resources.

(2) Employment Opportunities. Exceptionally high rates of unemployment result from a shortage of job opportunities for Alaska Natives at their present levels of education, training, and acculturation. Federal and state agencies in Alaska, particularly in the forestry and fishery fields, use primary-processing requirements and other policies as means toward creating otherwise uneconomic employment within the state. Native groups aspire to control land and water resources in the hope that their own management of them can be used to create jobs specifically for Natives.

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[10] Indicators showing this tendency include average unemployment and average wage and salary income. See Terry T. Brady, "Alaska's Economy in 1967," *Alaska Monthly Review of Business and Economic Conditions*, Vol. V , No. 2 (July, 1968), University of Alaska, Institute of Social, Economic and Government Research, June, 1968.

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(3) Property Income. The prospective value of mineral and timber rights and of urban land now in public ownership in Alaska is on the order of hundreds of millions and probably billions of dollars.[11] It is not surprising that Native groups look toward the potential income from public lands as a means of directly alleviating the poverty of their constituents and of providing the capital for Native enterprises. The example of the Tyonek Indians, who have used their oil revenues to build houses and village facilities and to invest in urban real estate and construction, as well as to raise their individual incomes, has been a powerful one.

(4) State and Local Revenues for Education, Health, Welfare, and Community Development. Regional economic growth can normally be expected to expand the revenue base for state and local government. In addition, the state receives income from mineral leases and timber sales both on state and on federal lands. The extent to which the growth of state and local revenues benefit Alaska Natives depends, however, on precisely how they are spent. In the absence of a comprehensive strategy on the part of the state for dealing with the problems of the Native people, Native groups can be expected to continue to rank this interest in economic development considerably lower than the previous three.

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[11] The value of these properties is measured either by the amount for which they could presently be sold, or by the present capitalized value of the revenues which could be expected from leasing them or selling their products. Hence, for instance, since the Prudhoe Bay oil strikes, the leasing of additional land for oil and gas exploration on the Arctic Slope could be expected to yield several hundreds of millions of dollars in bonuses alone. The amount of timber sale revenue flowing to the government from timber sales on federal and state forest lands in Alaska has not been a central concern of management policy; but if managed by private owners on commercial principles, these forests might have an asset value in the billions of dollars.

ECONOMIC CONSEQUENCES OF SETTLEMENT

Any forecast of the pace and pattern of economic development in Alaska is limited by the accuracy of its assumptions and must be accepted with great caution. The same caution is required with respect to forecasts of the economic consequences of any legislative package designed to settle the Native claims. The following remarks are intended to set out in what general *direction* will be the probable effect on the economic status of the Natives and on Alaska's general economic development of the individual elements of various settlement proposals, including those before the Congress.

Protection of Subsistence Resources

None of the legislation introduced so far deals in a definitive way with protection of fish and wildlife stocks used in the indigenous economy, or with protection of Native access to these stocks. With the partial exception of migratory wildfowl, fish and game are a matter of state title and state responsibility. Article VIII, Section 3, of the state constitution appears to preclude establishing proprietary rights in fish or wildlife harvests.[12] Under these circumstances, the only provisions of any of the existing bills which might effect *exclusive* Native access to fish or wildlife resources would be large grants of land in fee simple, or unrestricted grants of the surface estate. Such measures, while not conveying a property right in fish or wildlife, would enable Native proprietors to post the land against entry by others for hunting, fishing, or trapping.

Congress might, however, protect public access, Native and non-Native, to fish and wildlife by providing that state-selected land and other land withdrawn from the public domain in Alaska for other purposes remain open in perpetuity to (all) the public for hunting, fishing, and trapping. Under either of these provisions, the harvest in fact available to Natives would still depend upon state management and regulations.

The general economic impact of legislation in this area would depend upon the amount and location of lands and waters involved. There might conceivably be local effects on recreation and tourist-oriented enterprise, but these effects in the aggregate are not likely to be large.

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[12] "*Common use.* Wherever occurring in a natural state, fish, wildlife, and waters are reserved to the people for common use." In addition, Section 15 of the same Article reads, "*No exclusive right of fishery.* No exclusive right or special privilege of fisheries shall be created or authorized in the natural waters of the state." *Alaska State Constitution*.

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Grants of Homesites, Townsites, and Special-Purpose Locations

The absence of title to land occupied by Natives in Alaska villages is clearly an obstacle to financing homes, businesses, and community facilities. The grant of title to these lands would just as clearly have a beneficial effect on the village economy. The same is true of grants of land for expansion in the vicinity of each village. One necessary reservation here is that, unless some provision is made for future exchanges of land or otherwise for the occupation of new sites, families and communities may be tied to places which turn out to be poorly located from an economic or some other standpoint.

Grants of land title for homesites, businesses, community facilities, and special-purpose locations such as fish camps and burial grounds should not be expected to have any negative effects on general economic development. Some question might be raised about sites in existing withdrawals such as national forests. The total area of land involved is so small, however, that we can find no instance in which such transfers would subvert the purposes of the original withdrawal.

Individual Land Grants

The aggregate impact of granting individuals fee simple ownership, or title to either the surface estate or the mineral estate, on large tracts of land is extremely difficult to predict. It is obvious, however, that the benefits would be very unevenly distributed, both because of the wide differences in value of land resource, and because of wide differences in individuals' ability to manage and exploit these resources. Some individuals would undoubtedly become very wealthy, while a great number would probably not benefit at all.

It is not clear whether such a provision would on balance speed up or retard commercial development of Alaska resources. What probably can be said is that the time horizons of individual proprietors would be shorter, and their focus narrower, than would be the case with government management.

Land Grants to Native Corporations or Native Associations

There is no reason to expect the quality of managment employed by Native associations to be on the average inferior to that available to the state. Generalizations about management policy, however, are extremely speculative. On balance, ownership by Native corporations, like private ownership in general, would probably result in a more rapid rate of development and a greater concern for maximizing the economic returns from the land resources than would management by government agencies. For instance, Native corporations would probably not require primary processing of extractive products or "sustained-yield" timber management except where they were clearly justified in dollar terms. Native corporations in attempting to maximize their net incomes from the land would pursue a multiple-use policy, and in doing so would probably be able to resolve conflicts among competing *commercial* land uses more economically and more satisfactorily than would government. On the other hand, to the extent their policies reflected a single-minded concern with the commercial revenues of the land, they might be less concerned than would government with such nonmonetary and collective values as those of wilderness and scenery.

The previous treatment assumes that Native corporations would manage their land grants for their income rather than distributing them to individuals or selling out in order to distribute the proceeds. The impact of either of these policies on Native welfare would approximate that of individual land grants and individual cash settlements, respectively. Grants of commercially valuable land managed for its income by Native corporations could be expected to provide an income flow to individual families and to provide a source of capital which Native enterprise could invest in other lines of business and capital for community improvements. It would also provide openings for the development of Native managerial talent.

Individual Lump-Sum Settlements

It is again difficult to generalize about the impact of lump-sum individual payments on Native welfare except to say that the effects would vary immensely among individuals. Some Natives undoubtedly would invest their money very effectively; but because of poverty, lack of education and of commercial attitudes, a great number of recipients would undoubtedly soon be no better off than they were before receiving the grant.

For the same reason (i.e., the Natives' high propensity to consume), the lump-sum settlement to individuals would probably be a sharp stimulus to the general Alaska economy, but this stimulus would be of a "once-and-for-all" nature and would leave little lasting impact on Alaska income or employment.

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Individual Cash Annuities

Substantial cash grants to individuals, distributed regularly over a long period of time, might be expected to make a contribution to Native living standards proportionate to the size of the grant, and to be a corresponding stimulus to the regional economy. It is not clear, however, that such payments would be any different in principle or in effect from increased, universal, public-assistance distributions.[13]

Cash Settlements to Native Associations or Corporations

A large cash settlement distributed to a Native corporation or corporations, if treated as investment capital rather than distributed to individuals, could be expected to provide a continuing stream of income to individuals as well as a source of funds for enterprise and for community development. It would also provide openings for the development of Native management talent. Beyond this it is difficult to generalize, because the impact both on welfare of individual Natives and on overall economic development would depend on the investment policies pursued, and on the managerial skills provided by, or hired by, the Native groups.

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[13] This study is not the proper place for a full discussion of the philosophy and economics of welfare. Existing public-assistance programs are under critical examination throughout the United States, and several alternatives are being widely considered. It is appropriate to point out here, however, that some kind of family income maintenance program will be required in rural Alaska for many years. We would hesitate to generalize about the relationship of public-assistance payments to the feelings of self-respect and to the economic motivations of Alaska Natives, but it is clear there is a close connection among them in the thinking of the cultural majority in America. "Unearned" income is regarded as degrading and disgraceful if the recipient gets it because he is poor and unemployed. But such income is highly respectable if it comes from the ownership of land or of securities. This consideration suggests that, dollar for dollar, public funds distributed to Alaska Natives may be more effective in raising their social and economic status if done wisely as part of a land-claims settlement than if done as public assistance.

Share of Revenues from Public Lands (and/or Outer Continental Shelf)

Distribution to Natives of a specified share of revenues from all or from certain kinds of public lands in Alaska would have effects on Native welfare similar to that of cash disbursements and would vary similarly depending on whether the payments were to individuals or to Native corporations. In the latter case, they would vary depending on the managerial skills available to, and the policies of, those corporations. Unlike grants of commercially valuable lands to individuals or to Native corporations, land and resource management would remain a government responsibility and would probably be pursued with a broader range of policy objectives than would be the case under private ownership. The flow of funds to Native individuals or groups would begin sooner than they would in the case of grants of land title, unless the latter included lands presently under mineral lease.

Any increased investment or expenditure in the state resulting from these payments would clearly be an impetus to overall economic development, except to the extent they preempted a share of royalties, lease payments, or timber sales revenues which would otherwise accrue to state or local government. The net effect on economic development in the latter case is not clear.

Tax Exemption

Tax exemptions *could* have significant fiscal implications for the state and local government. The real estate exemption of S.B. 3586, for instance, keeps all the lands granted off the property tax rolls whether they are "in fee or in trust." This provision applies as well to any minerals associated with the land grant which could otherwise be made subject to *ad valorem* levies where tax bodies existed. Conceivably, these sums might amount to considerable amounts of public receipts foregone. Some caution is appropriate here, however, in that too early and too much land taxation can result in confiscation of the land, which result would clearly be counter-productive to the policy resolution intended.

The problem here seems to be to distinguish among the different purposes for which land might be granted. In the case of homesites, fishing camps, and the like, or of lands granted to protect subsistence activities, maximum insurance is required against confiscation because of the owner's inability to pay taxes. In the case of grants of commercially valuable land for income purposes, however, the point is to get them into a productive, income-earning position and, indeed, to get them *on* the tax rolls. To the extent that these lands are in fact capable of producing income, there is no obvious justification for keeping them off the tax rolls simply because they happen to be owned by Natives or Native groups.

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Any provision, however, that initial cash payments under the Act are not taxable means simply that any monetary settlement is effectively larger in disposable income than its nominal dollar amount.

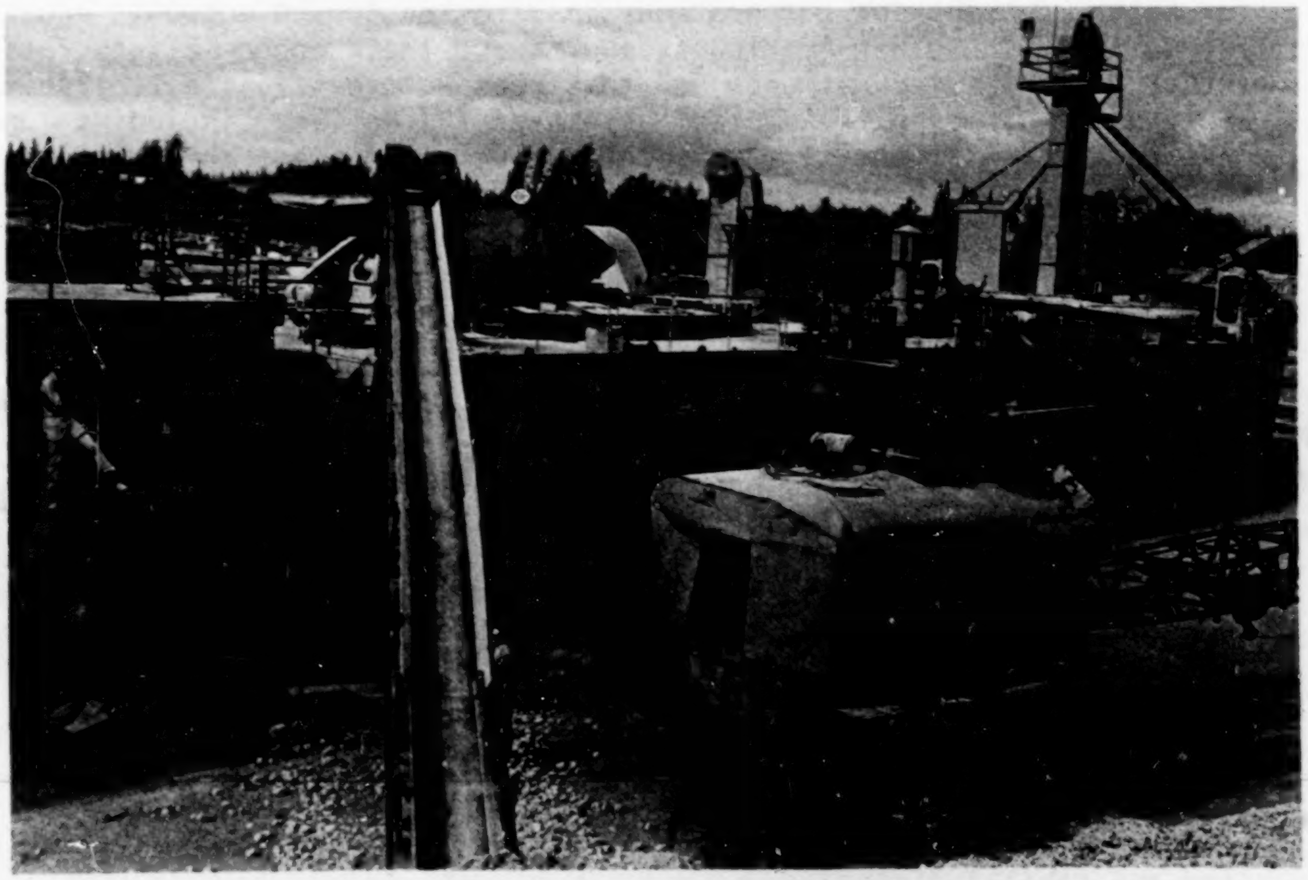
The provision in S.B. 3586 relating to Section 501 of the Internal Revenue Code indicates that another "nonprofit" enterprise would be created, a corporate status which is currently under serious review by government and public-finance scholars alike. In a state the vast bulk of whose land and a great proportion of whose capital assets are already exempt from taxation, there seems to be no economic justification for this further departure from tax uniformity.

Corporate Organization, Trusteeship, and Property Alienation

To the extent that lump sums, tracts of commercially valuable land, or a share of the revenue from public lands in Alaska are transferred to Native corporations, a major purpose is to assist the Natives as a group to get a firm footing within the money economy and the capitalistic organization of the United States. Other aspects of the claims settlement may be designed to protect those Natives and Native communities which wish to maintain intact their nonmarket economy and their distinctive ways of life. But legislation providing a special role for Native development corporations is directed toward economic equality for Natives with other Americans, and toward their economic integration into the life of the nation. For this reason, provisions establishing any trusteeship over the capital assets of the Natives, including land, or establishing a special status for Native development corporations, should be carefully examined and the time span of these provisions carefully considered.

The desire to protect a vulnerable people from exploitation or expropriation must be balanced against the desirability of giving them early control over their own livelihood and their own assets, and against the community's interest in avoiding franchise to private monopolies and special privilege. While restrictions on land transfer or stock sales to non-Natives provide some protection to the improvident and the gullible, these restrictions will sharply reduce the *value* of the assets involved. Land which cannot be alienated cannot be mortgaged. If the land is the owner's only capital asset, he is tied to it economically as securely as if he were a serf. Stock in a Native corporation which can be sold only to eligible Natives is *ceteris paribus* worth less than stock which can be sold to anyone; stock which cannot be sold at all is, of course, worth even less. To the extent that the property of individual Natives or of Native corporations is encumbered either by law or by covenant, the value of that property will be reduced, the economic freedom of the Natives impaired, and the most productive use of land and capital discouraged.

The bills so far presented to Congress for settlement of the land claims include two distinct approaches to protecting both Native assets and the public interest during a prolonged transition to full equality. One approach would hold much of the Natives' assets in trust and would rely heavily on the discretion of the Secretary of the Interior. The second approach, together with or separate from the first, provides a multitude of special provisions for Native development corporations, including tax exemptions and restrictions on the disposal of their assets and on stock ownership. Congress may wish to consider whether either apparatus is really necessary, if the Native development corporations commence with sufficient economic scale in terms of cash, land title, revenue shares, or some combination thereof, to reduce uncertainty about future income to acceptable levels, to distribute its benefits widely among the Native communities of Alaska, and to engage first-rate professional management. In this case, the public interest, Native and non-Native alike, might best be served by the early transformation of the Native development corporation into onewith all the rights and responsibilities of other businesses in our economy.



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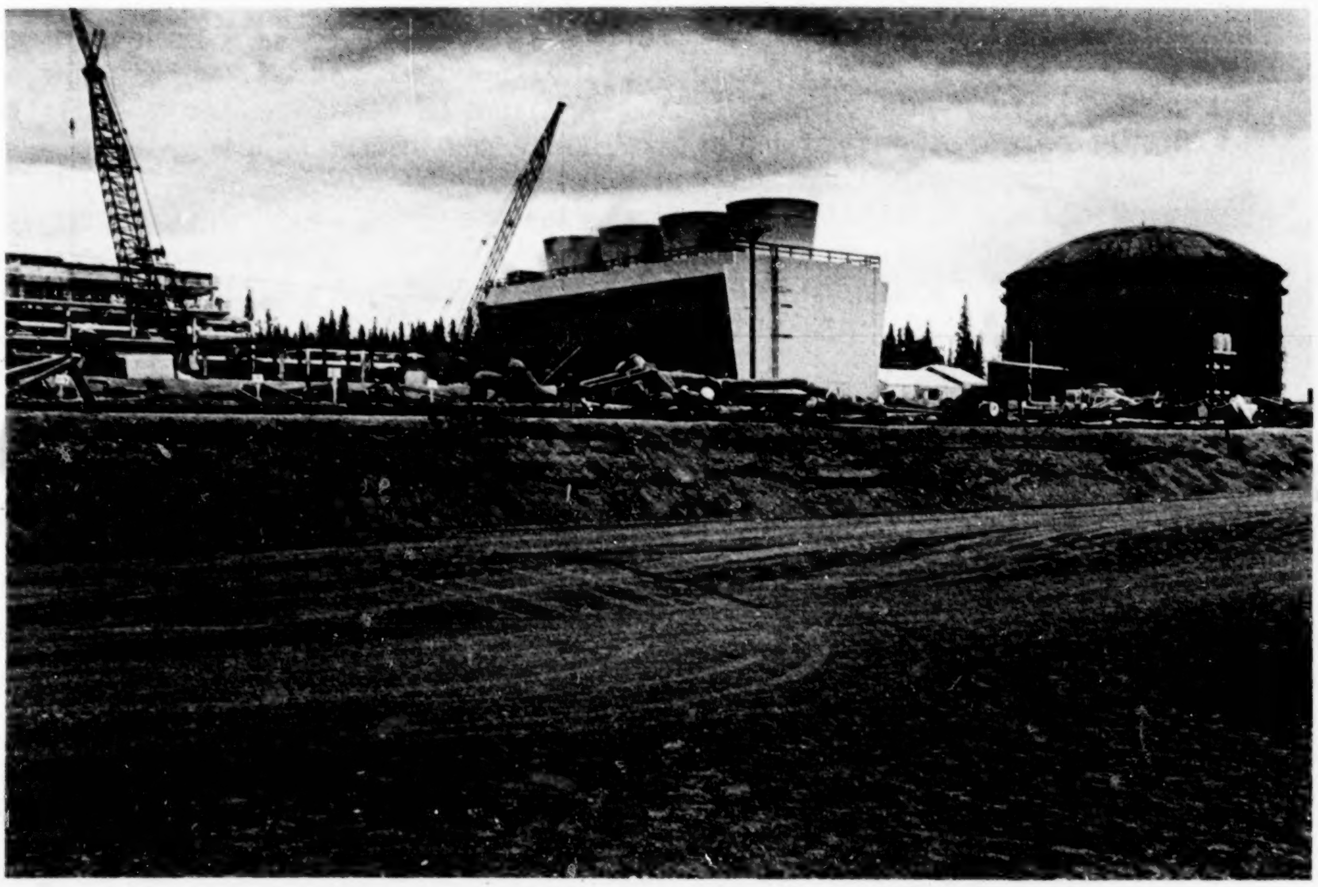

Alaska's industrial growth is directly involved with natural resource extraction and processing. *Photos by Maureen J. Lund, Petroleum Publications, Inc.*

FRAMEWORK FOR DECISION

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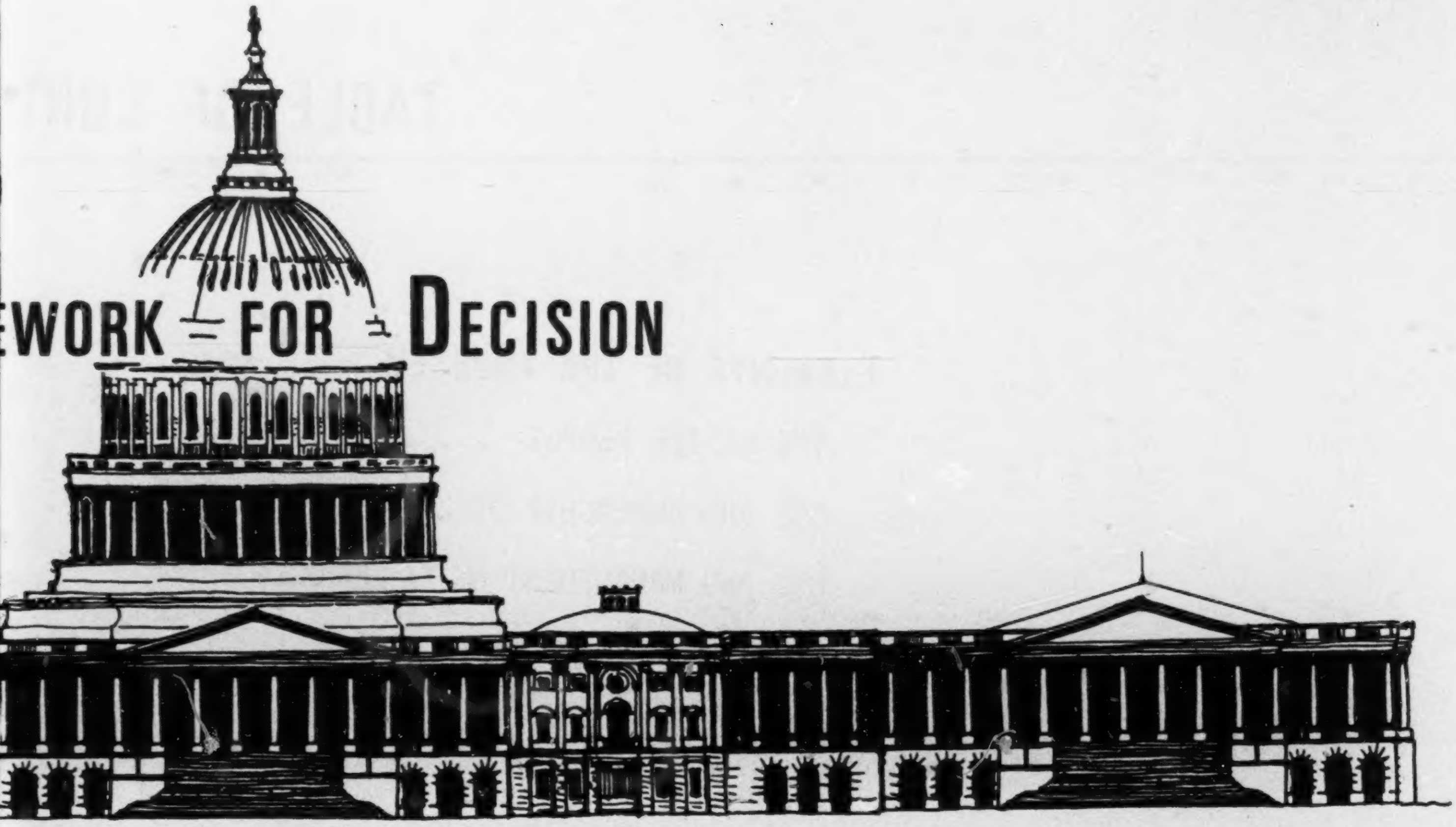
CHAPTER VII



EWORK FOR DECISION

Esther C. Wunnicke
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962

CHAPTER VII

TABLE OF CONTENTS

ELEMENTS OF THE PROBLEM . . . .
- THE NATIVE PEOPLE . . . .
- USE AND OWNERSHIP OF LANDS . . . .
- USE AND MANAGEMENT OF RESOURCES . . . .

ELEMENTS OF THE SETTLEMENT . . . .
- LAND FOR USE . . . .
- COMPENSATION . . . .
- ORGANIZATION . . . .

A CONCLUDING NOTE . . . .

Any conclusions or inferences in the text are those of the staff

963

CHAPTER VII

TABLE OF CONTENTS

THE PROBLEM 536
PEOPLE 536
NERSHIP OF LANDS 536
NAGEMENT OF RESOURCES 538
F THE SETTLEMENT 539
SE 539
ON 540
ON 545
G NOTE 546

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rences in the text are those of the staff of the Federal Field Committee only.

FRAMEWORK FOR DECISION

Alaska Native land claims, coming at a time of major resource discoveries and as the state is entering a period of rapid economic development, present a problem which, in scope and urgency, is the most important problem facing the state today--a problem which can only be resolved at the national level.

In scope it is the most important problem because, left unresolved, a cloud on the title to three-fourths of the land in the state would constitute an effective bar to economic development. Development without a settlement of Native land claims, on the other hand, would irrevocably impair the rights of Native peoples in the use of their historic lands and would result in but limited participation by them in the fruits of such development.

Underlying the urgency of a settlement is the need to get on with the job of developing the economy of Alaska and of assuring Native participation in such development. This rules out a lengthy process of judicial decision and makes mandatory a legislative solution.

In many respects accidents of history and separate federal policies toward Alaska Natives and their land claims have created a different set of problems to be resolved by this legislation. Following the purchase of Alaska in 1867, there were no wars between Native tribes and the United States, no treaties signed, and no removals to reservations. The Native people thus gained no title to nor legal recognition of their rights to their historic lands, although they continued to live upon the land and pursue their traditional ways of life largely free from governmental restraints. Many of the major federal land withdrawals--some of them within the first decade after purchase--interfered little with the Native way of life. The slow rate of growth of Alaska prior to World War II put little pressure on the Native people to move from their lands or to change their pattern of land use.

The present confrontation of Native and non-Native in the use and ownership of lands in Alaska developed largely from three recent major events: the influx of non-Native settlers during and after World War II, statehood and the grant of the right to the state to select more than 100 million acres of land, and the emergence of resource development as a major economic force in the state.

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Given a different history, the Native peoples of Alaska present their claims under markedly different circumstances than pertained to Indians elsewhere in the United States:

....The Congress has consistently provided since the Organic Act of 1884, and most recently in the Alaska Statehood Act, that Alaska Natives shall not be disturbed in the possession of any lands actually in their use or occupation or claimed by them, and has reserved to itself the determination of their title;

....There are no treaties between the United States and Alaska Native groups setting forth the lands which they may occupy or their rights to the taking of fish and game;

....There is no tribunal before which the Natives of Alaska generally can obtain compensation for losses of their land; only the Tlingit-Haida Indians of southeastern Alaska have, under special jurisdictional act passed by Congress, obtained a judgment from the Court of Claims; this was limited to lands taken before 1935.

The claims of only twelve Alaska Native groups are pending before the Indian Claims Commission for causes of action accruing before 1946. Generally, the Native groups and villages of Alaska were not informed of nor did they learn of their right to make claims for lands within the time for filing under the Indian Claims Act.

The problem presented the Nation in the Alaska Native land claims is to avoid a narrow solution which only weighs what has been taken against a precise compensation for it. The opportunity is to find a solution which confirms rights and provides an assurance that Alaska Natives may share equitably in the future social and political life of the state.

ELEMENTS OF THE PROBLEM

An examination of the elements of the Native land claims problem reveals the varying, and sometimes conflicting, objectives of the Nation, the state, and the Native people to be resolved in its solution.

THE NATIVE PEOPLE

About three-fourths of Alaska's 53,000 Eskimos, Indians, and Aleuts live in 178 predominantly Native communities, most of which are at locations remote from the road system of the state. The median size of these places is 155 persons. In these villages, the few, permanent, full-time jobs at highest rates of pay are typically held by non-Natives. Low cash incomes and high prices, even though supplemented by free health and educational services, and food-gathering activities, have resulted in exceedingly low standards of living for villagers: dilapidated housing, absence of sewer and water facilities, and electric power. State public assistance programs provide income to almost one of four households in villages; temporary relief programs provide income to about the same proportion, but usually for three months or less. Most village adults have less than an elementary school education, and large numbers have no formal education at all; for village adults speaking English, it is a second language. Nearly all Native communities have schools, but educational opportunity ends at the eighth grade in most places. Owing largely to socioeconomic conditions and the difficulty of providing health services to remote villages, the health status of Alaska Natives is inferior to that of other Alaskans.

About one-fourth of Alaska's Natives are residents of predominantly non-Native communities where job opportunities exist. Because adult Natives are often less well educated than other adults and lack marketable skills, their rate of joblessness in these communities is higher than among other groups, and those who are jobholders are typically in lower-paying positions. Migrants from villages to urban areas are frequently ill equipped, by cultural as well as educational background, to make an easy transition to new patterns of life and work, but few communities have begun to provide assistance to them; and the consequences for too many are severe stresses resulting in alcohol problems and other personality disorders.

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Alaska Natives are eligible for a wide range of federal services offered by the Bureau of Indian Affairs and the Division of Indian Health of the Public Health Service, but such eligibility does not necessarily assure that a service will be afforded them owing to inadequate funding or the difficulty of providing such services. Although Alaska Natives may be employees of these agencies, and with increasing frequency are acting in an advisory way to them, they are not really involved in the planning and implementation of the programs.

Among Alaska Natives today there is an ever increasing ability as well as a desire to more fully participate in decisions affecting their lives. Fifty-eight villages are chartered under the Indian Reorganization Act and have constitutions, by-laws, and charters under which they may provide services and engage in business. Twenty of these places also are organized under state law as fourth, second or first class cities. Another twenty-one villages are organized only as cities under state law. The remaining villages are organized only on a traditional basis.

Most villages are affiliated with regional associations and with the statewide federation of Natives, and their delegates participate in deliberations and decisions of these organizations. There are today fourteen such regional groups. In addition, there are seven Native organizations organized on a community basis in Anchorage, Fairbanks and other places. It is through these organizations that protests to the transfer of lands by the federal government to others have been filed. They rely in their protests upon possessory rights earned by continuous aboriginal use of the land.

USE AND OWNERSHIP OF LANDS

Aboriginal Alaska Natives made use of all the biological resources of the land, interior and contiguous waters in general balance with its sustained human carrying capacity. This use was only limited in scope and amount by technology. In their use of the biological community for livelihood the Native people "occupied" the land in the sense of being on and over virtually all of it in pursuit of their subsistence, but they did not "occupy" the land in an agrarian or legal sense as understood in Anglo-American jurisprudence.

Native settlement patterns have been very substantially affected by natural physical and biological forces and, in more recent time, by the decisions and actions of church, government, and industry. Such forces continue to influence settlement patterns today. Thirty-seven Native places existing in 1950 had declined to one or two families or had been abandoned by 1967, but 21 additional places had become established as villages by 1967. Eighty percent of the 178 villages are larger than they were in 1950.

Aboriginal group or "tribal" territoriality with definable bounds did exist in Alaska. Most Native groups also recognized individual and family or group "property rights"--particularly in the usufruct sense--to harvest the products of the land, and the amount of land used and occupied by peoples in Alaska to support their livelihood varied greatly in amount among ethnic groups dependent upon diverse environments. Such variety continues to be the pattern today. And while not all villages or villagers depend upon resources of the land and waters for subsistence to the same extent, reliance upon gathering activities is generally characteristic of most of the predominantly Native communities where about three-fourths of Alaska's Eskimos, Indians, and Aleuts live.

Alaska Natives who claim two-thirds of the state own in fee simple less than 500 acres and hold in restricted title only an additional 15,000 acres. Some 900 Native families share the use of 4 million acres of land in twenty-three reserves established for their use and administered by the Bureau of Indian Affairs. All other rural Native families live on the public domain. And reindeer reserves account for 1-1/4 million of the 4 million acres of reserved lands. Without government permit, these reindeer lands may only be used for reindeer husbandry and subsistence purposes.

Specific land legislation passed for Alaska Natives--the Alaska Native Allotment Act of 1906 and the Townsite Act of 1926--has failed to meet the land needs of the Native people. In the 62 years since passage of the Native Allotment Act only slightly more than 15,000 acres of land have been deeded, by restricted deed, to 175 Native allottees. And in the 42 years since the passage of the Townsite Act, only 28 Native villages have been surveyed with deeds issued to their inhabitants; and title in fee simple to less than 500 acres has been conveyed.

Of the 272 million acres in the public domain, Natives claim 250 millions acres; of the 85 million acres of land reserved by the federal government for specific purposes, they claim 75 million acres; of the 12 million acres thus far in process of selection by the state under the terms of the Statehood Act, they claim all but 100,000 acres; and of the 6 million acres already patented to the state or to private individuals, they claim 3 million acres.

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Aboriginal possessory rights, based upon continuous aboriginal use, are valid against all but the sovereign--in this case the federal government--and are compensable rights once permission to bring an action for their loss is granted by the sovereign.

Any lands granted as compensation for rights in land lost must be from lands still within the control of the federal government; and although the state may elect to assist in the settlement by granting shares in future revenues to Alaska Natives, the claim for money compensation, like land compensation, is against the federal government.

Unappropriated lands presently under federal control total over 250 million acres. But these lands are not uncommitted. On the contrary, in the Statehood Act for Alaska passed ten years ago, the state was given the right to select nearly 103 million acres--and 85 million acres of this commitment remain to be selected. In addition to the public domain lands there are 85 million acres of federally withdrawn lands which the state sees as the source of grants under the settlement, or as a reimbursement to the state for other lands used in the settlement to which the state might be entitled. The legislative history of the Statehood Act reveals a strong statement of the willingness of Congress to reexamine federal withdrawals in Alaska, and a detailed study is now being conducted by the Public Land Law Review Commission. Far-reaching decisions as to the merits of particular withdrawals may be left to Congressional determination in the light of this study, with full awareness that as large acreage grants reduce the amount of desirable land available for state selection, the pressures to release existing federal withdrawals will increase. However, adequate information on existing federal withdrawals in Alaska is available to the Congress to make specific findings should they be required in the settlement of the claims.

National policy with respect to the public lands is one of multiple-use management which recognizes disposal under certain circumstances, access requirements for commercial development of resources, and the support of other national objectives. The withdrawal of lands for specific purposes has been the method of meeting some of those national objectives in the past. For example, Alaska is an area of military significance; and those lands presently withdrawn, or those lands to be withdrawn in the future for defense purposes, are particular sites to which top priority is to be assigned. Also, as the last and most extensive wilderness area in the United States and an area of unparalleled grandeur, the development of National Wildlife Ranges and Refuges and National Parks in Alaska is also of high priority. A broad range of public purposes is also met by the management of the two large National Forests in the state.

Although some of the federal withdrawals have the management of a particular resource as their purpose, other important resources of the state are located on, or under, the public domain, or lands or waters belonging to the state.

USE AND MANAGEMENT OF RESOURCES

Alaska's wildlife resources which are of national significance are afforded habitat preservation and management by the federal government. While Alaska Native populations depend in whole or in part upon biotic resources in order to sustain life and while many of Alaska's wildlife resources are of national significance, there is little conflict between the national wildlife objectives and Native subsistence requirements, with the possible exception of some migratory bird nesting populations. Increasing conflict between the sport or commercial harvest of wildlife resources and the subsistence harvest of these same resources by the Native people is, however, developing.

Legislative jurisdiction for all wildlife resources, except for migratory birds, is vested in the state of Alaska. On the other hand, proprietary jurisdiction of most of Alaska, the habitat of wildlife, is vested, at this point in time, primarily in the federal government which has the right to prescribe who, where, and in what manner persons may enter, travel across, and conduct activities upon land within its jurisdiction.

As in the case of wildlife resources, the Native "property right" in the fishery resource was "taken" when legislative jurisdiction over fish and wildlife resources passed to the state by virtue of the Statehood Act. Alaska's Native people rely heavily upon the fisheries, but they share in these resources only as members of the general public.

The fishery resource is a natural resource which offers immediate direct promise for major economic participation; one in which Natives can compete as wage earners with moderate outlays of capital. It is a renewable resource with which Natives are familiar.

The general development and allocation of Alaska water resources is essential to economic growth and community welfare in Alaska. Furthermore, Alaska is a region of water surplus and is considered as a future potential continental water source for water-deficient areas in the western United States and Canada. While the largest possible use for Alaska water resources is hydroelectric power development, this, with the exception of a few sites, does not exhibit favorable cost-benefit ratios. The federal withdrawal of many hydroelectric power sites which have no foreseeable reservoir areas, however, prevents a conflict with potential land ownership to many Native groups and villages.

Many Alaska aboriginal groups recognized a "user right" to individuals or families for a net, wier, or other fish catching place on a river or lake; no such exclusive "right" now exists on navigable waters because the Statehood Act extinguished any personal proprietorship and vested general ownership of lands beneath navigable waters in the state.

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There is need to provide watershed protection to water source supplies for Alaska's cities, towns, and villages. Depending upon location and physiography, community watersheds may have to be of considerable size in order to provide for safe and adequate supplies in the future. There is need also to provide land for public flood plain zoning in many regions of Alaska as economic and community growth increases.

Alaska possesses 16 percent of all U. S. forest resources. Nearly all forest resources of Alaska are subject to federal jurisdiction. The important commercial forests of the coastal zone are administered by the U. S. Forest Service within the Chugach and Tongass National Forests. Interior forests on the public domain, comprising 32 percent of the total land area of Alaska, 21 percent of which is commercial timber, are administered by the Bureau of Land Management. These interior forests are subject to state selection and also offer a possible resource to Native claimants.

Almost all available cropland in Alaska has been selected by the state or patented to private interests. The undeveloped agricultural resource significant to Native claimants and non-Natives alike, however, is grazing land--particularly on the Alaska Peninsula, Kodiak Island, and the Aleutian Islands. With improved transportation and changing economic feasibility, livestock production (cattle and sheep) is a potential expandable use for the grasslands of western Alaska. However, conflict with wildlife use of the same lands is probable; and at the present time, wildlife is the more economically valuable resource. A particularly important grazing land use occurs on lands of the Seward Peninsula, St. Lawrence Island, and Nunivak Island and a few other small areas of western Alaska where Native reindeer husbandry is practiced.

Although present areas of intensive recreational use cover less than one-sixth of Alaska--chiefly in areas adjoining the major communities--the recreational resources of the state are one of the most potentially valuable economic assets of the nation, state, and Natives in the years ahead. Estimates are that by 1980 nearly three-quarters of a million tourists will have visited Alaska, adding thereby $225 million to the Alaskan economy in the fifteen years following 1964.

The potential wealth of Alaska mineral and oil and gas resources is not known, although it is estimated to be many billions of dollars. So little of the state's geology is understood--many regions of the state being virtually unexplored--that it is impossible to pattern a rational distribution of land based upon mineral wealth. Nevertheless, sufficient knowledge exists to say that geologic distribution of known deposits is extremely unequal and variable.

ELEMENTS OF THE SETTLEMENT

The major elements of settlement available for a solution of the problems presented by Alaska Native land claims can be treated in three broad categories:

(1) The grant or protection of lands and land rights now used by Alaska Natives for townsites, hunting and fishing camps, and subsistence hunting, fishing and other food and fuel gathering areas;

(2) The provision of compensation, either in lands or revenues, for those possessory rights to land taken in the past or to be taken as a result of this legislation; and

(3) The establishment of organizations for the management and administration of lands and revenues and the adjudication of conflict.

LAND FOR USE

Village Sites and Camp Sites

That it is the expressed policy of the nation to protect the Alaska Native people in their present occupancy of lands is stated in the President's Message to Congress of March 6, 1968, in which specific attention was paid to Alaska Native land claims and in Senate Concurrent Resolution 11, passed by the Senate of the 90th Congress on September 12, 1968, pledging support for policies which meet the moral and legal obligations of the nation toward American Indians and Alaska Natives--specifically in the protection of their lands.

No economic ill effect or detriment to public land management can be seen in the granting of village sites. On the contrary, villagers can anticipate real economic gains; and government will be relieved of a burdensome and expensive managerial responsibility.

Even under the most strict interpretation of possessory rights, there is no alternative to the granting of title to village sites and fishing and hunting camps.

Most of the proposals before Congress contemplate transfers of village sites to villages with subsequent transfers of parcels to individuals. Because townsite surveying is a time-consuming process,

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it is desirable that the Secretary of the Interior withdraw land by projected least civil divisions. A minimum of one township for each existing village is necessary to protect such lands as are used and as may be needed for expansion until the internal townsite surveys can be completed. Once townsite surveys are completed, the Department would transfer the parcels to the individuals occupying them; and the remaining lots would be transferred to the village government.

The transfer of township units for villages, either separate or in close juxtaposition, is desirable to provide room for relocation due to natural problems that arise affecting village location. Where villages are in close proximity, the number of villages times the township unit could be the total amount surrounding the entire group of villages. For example, in the Bethel area where there are nine villages in close proximity, the grant of a minimum of nine townships for village sites would be desirable. Such grants would total a little more than 4 million acres for all presently existing villages. Finally, so that individual land ownership not be too long delayed, legislation should include funding and authorization for an acceleration of the current program of townsite surveys.

Grants of fishing, hunting, and food-gathering sites may be made to individuals now using them or to Native groups for later transfer to the individuals in possession. Since agencies do not have knowledge of the locations of all such camps nor their users, the most practical approach is to have government teams meet with villages in the field to obtain applications from villagers for the sites they use. Even residents of the largest villages continue to use historic sites for hunting, fishing, and trapping--sometimes for longer periods than they reside in what may be called their home villages.

Congress might impose a maximum number of subsistence-use sites and a maximum acreage that might be embraced by all applications from each head of a household or other adult, but in so doing it should be remembered that the number of subsistence sites required for each family in their subsistence quest varies throughout the state.

While the 160-acre limitation of the Alaska Native Allotment Act might be adequate, the limitation to only four parcels would not cover the number of sites now in use by many families. Because identification and transfer of these subsistence use sites might take as long as five years, written nominations of land by villages to cover these uses should be the cause for immediate withdrawals by the Secretary to protect such sites until village hearings and formal applications are received. It is estimated that about 1.5 million acres would meet minimum needs for these sites.

While it is doubtful that a case can be made against granting of village or subsistence use sites on most federal withdrawals, the location of some villages in Alaska's two National Forests does raise a question. Of the Native villages in the forests, only two remain unsurveyed; and surveys there and subsequent grant of titles should be promptly made. The question is: Would the allocation of lands for hunting and fishing camps in the National Forests unduly affect public managerial responsibilities of the Forest Service, not only for timber harvest, but also for watershed protection, wildlife management, and recreational purposes? If the answer to this question favors the allocation of hunting and fishing sites in the forests, a second question is whether such grants should be made to villagers in southeast Alaska where lands included in the Tongass National Forest have been included in the Tlingit-Haida judgment. Despite the judgment, Congress might take the opportunity to treat all groups equitably by transferring lands, which the Court of Claims could not do, and granting subsistence sites to the Natives of southeastern Alaska.

Since there may be several hundred Alaska Natives who live outside of Native villages and who are living on public lands, the legislation also might provide for confirmation of title to lands in their possession. Complicated procedures followed under the Alaska Native Allotment Act have resulted in virtually no Native allotments being issued in present rural areas. So, if the Act is considered as a means of granting title to these rural non-villagers, amendment to simplify procedures may be necessary.

Lands for Subsistence Use

There is no dispute that the right of Alaska Natives to go upon federal lands for the purpose of taking fish and game should continue. Although all of the proposals before the Congress provide for the granting of the right, the authority to regulate the taking of fish and game on all but certain federally withdrawn lands belongs to the State of Alaska.

Even the grant of surface title to lands used for subsistence purposes would not eliminate the authority of the state to regulate the taking of fish and game on those lands. It would, however, enable the owners of the land to prohibit the entry of sportsmen or commercial interests for the harvest of fish and game as well as non-Native subsistence use. Should the granting of surface title be the means of assuring the Natives use of the lands for subsistence, it would require a grant in varying amounts according to geographic location and biotic carrying capacity, totalling at least 60 million acres.

Although the federal government cannot regulate the taking of fish and game, and the state under the terms of its Constitution cannot grant exclusive hunting and fishing rights, Congress in effect could grant exclusive hunting and fishing rights by granting an

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easement to Natives only to enter the public domain for these purposes. Present proposals enable the Secretary of the Interior to grant such exclusive easements as a discretionary power. While a grant of exclusive easements across all public lands would not be wise public policy, because it would undermine the pattern of subsistence use by non-Natives, limit recreational attractions of the state, and encourage racial divisiveness, permitting the Secretary to protect threatened subsistence resources by this technique is probably good policy.

An alternative means of protecting subsistence resources is to grant exclusive rights to go upon the public lands within certain well-defined ranges adjacent to particular villages to the occupants of those villages--Natives or non-Natives. If there is doubt that entrance to subsistence use areas of Alaska may be unduly limited by disposal of the lands before subsistence uses cease, it would be possible to provide for such access on a nonexclusive basis as a condition of transfers of the land from federal ownership.

Generally, the state's management of fish and wildlife resources is excellent. However, there are important instances of conflict of Native subsistence needs, recreational needs, and commercial exploitation of fish and game. The Congress may well wish to secure the definitive position of the state relative to its approach to the management of these resources in conflict.

The granting of lands for village sites, camp sites, and subsistence use--or the protection of subsistence use by other means--will resolve the uncertainty of right to land and protect the present livelihood of Alaska Natives. Other grants of land, particularly those which include subsurface rights, may be considered a form of compensation for aboriginal rights lost. In addition,they may be the means by which Alaska Natives participate in the future economic growth of Alaska.

COMPENSATION

Compensable claims by Alaska Natives are based upon past withdrawals by the federal government and upon the failure of government to protect them in the possession of their aboriginal lands from the takings of others. Similar claims have been honored for other American aborigines by the Congress and by the courts. The additional dimension of the Alaska Native land claims is that a settlement itself--by exchanging some lands for others and some land rights for others--may constitute the greatest taking of all.

When all compensable takings are considered, the problems of determining compensation are twofold: to determine the amount of compensation based upon the amount of land rights taken, the time of taking, and their marke. value at that time; and to determine the form and distribution of the compensation.

Amount of Compensation

This basic determination may be made by decisions in two broad categories:

(1) Time of Taking. The dates of lands lost by specific federal withdrawals can be determined with accuracy as can the dates of lands lost by state selection. The loss of usufruct hunting and fishing rights, as well as the loss of rights in any tideland and inland waters, can be tied to the date of statehood. The loss of other claimed lands not confirmed in Native ownership can be said to have been taken on the date and by the terms of this settlement.

(2) Market Value. Market value of lands at the time of the federal withdrawals, at the time of statehood, and at present can be broadly determined. Although merely a possessory right of use and occupancy, it is recognized that the market value of the "Indian title," under which Alaska Natives claim, is to be computed as though the lands were owned in fee. Thus, the market value of the land would include the value of its known mineral content although not its speculative value. Each year of delay, as the resources of Alaska are developed, results in increased land values for which compensation is sought.

Form of Compensation

Money, in installments, or a lump sum, is not the sole form of compensation. Land, and interests in land, as well as participation in future revenues from land or resources may also be used alone or in combination with other compensation forms.

(1) Grants of Land as Compensation

Proposals before the Congress provide for confirming title of both surface and mineral estates of the presently existing reserves together with land grants to other Native groups. Total proposed grants for use and compensation range from no more than 20 million acres in the bill presented by the Department of the Interior to no less than 40 million acres in the bill presented by the Alaska Federation of Natives. But, as previously stated, if grants to meet subsistence needs are to be made which recognize varied subsistence ratios between people and acres of land, then a minimum of 60 million acres would be required. If land grant provisions of the settlement are computed in terms of a static, acre-per-person formula, this crucial question is overlooked. The question is not how much land per capita but rather how much land in relationship to the number of people the land will support. Similarly, if grants are to be made to provide a future economic base for Native groups, then a computation in terms of acres per person overlooks regional variation in resource endowment.

Accenting this problem are proposals calling for enrollment procedures which allow Natives away from their own villages, even in urban places, to elect enrollment in a village in which they no longer

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live, indeed in a village which no longer exists. Enrollments of urban Natives that inflate village populations would appear to serve no good end for the urban Native unless enormous mineral wealth exists in the land and a share is distributed to him. Enrollment of persons at now abandoned village sites or at other places they were born, such as summer fish camps, would have the unfortunate consequence of increasing the number of villages to which grants would be made, and if resettlement occurred, to which public services would have to be extended. It is conceivable, based upon the historic record that 200 to 400 old village sites could be reoccupied, thereby tripling the number of rural Native places in Alaska.

Given the conflicts and complexities of grants of land as compensation, a decision to make such grants should be accompanied by a consideration of making the grants to groups of villages or regional associations.

Land grants for compensation, in excess of confirmation of title to village and subsistence-use sites, should be made only with recognition of intervening public and private purposes and recognition of the likely consequences of such grants.

Intervening public and private purposes include:

(a) Lands within federal withdrawals. It is likely that some of the 85 million acres now federally withdrawn may be released following review by the Public Land Law Review Commission of federal land policy in Alaska, but at this time--unless Congress acts respecting those withdrawals--they are unavailable to the settlement.

(b) Lands subject to state selection. If the state should choose only one-half the acreage to which it is entitled under the Statehood Act, its selections, if given priority, would inevitably remove most of the best lands that might otherwise go to Native claimants. The 18 million acres selected thus far have already encompassed many village and subsistence-use sites, particularly those of the Tanana and Tanaina Indians of the Fairbanks and Cook Inlet regions, respectively.

(c) Lands open to public uses. Finally, increasing demands of American citizens generally for outdoor recreation focus attention upon the wilderness of Alaska.

Another problem whose dimensions are not fully known is that grants as small as 50,000 acres per village would pose numerous conflicts, particularly in southwest Alaska, as to what lands would go to one of several villages in close proximity.

Great disparities appear when proposals to grant 50,000 acres, or a township, or the multiple of 500 acres per person are compared with the confirmation of title to a reserve such as the Chandalar Native Reserve of over one million acres. Although the most recent proposal supports grants of title to all existing reserves, earlier proposals provide for such grants only to villages organized under the Indian Reorganization Act.

Given the variations in size of Alaska Native reserves, the addition of mineral title commensurate with surface boundaries only increases inequities. It should be noted, however, that any decision against conveying mineral rights in lands granted, if existing reserves are included, would result in the loss of the only mineral rights now producing revenues for Alaska Natives--those revenues accruing to the villagers of Tyonek on the Moquawkie Reserve.

A reasonable alternative to denying or granting mineral rights in all land conveyed across the board might be one which gives the option to Native groups of accepting the mineral rights in the lands conveyed them or in sharing pro rata in future revenues from a general acreage.

Another possible consequence of granting land as compensation to Alaska Natives may be that the compensation realized will be empty of real meaning for their future. While such grants would give the fullest protection to present subsistence use, in some areas the scarcity of commercial resources would promise little prospect for modern economic growth, would provide a disincentive to move to areas of economic activity, and, in all likelihood, would diminish the amount and kind of compensation that might otherwise be awarded.

Alaska is now a viable, dynamic frontier. Its society is integrated in the best sense of that word. Should grants of blocks of land result in the kind of isolation experienced by some American Indian groups on reservations, tragic social and economic consequences to Nation, state, and Alaska Natives could be expected to follow.

There are other methods of awarding compensation in the form of estates in land aside from granting lands that surround village townsite grants.

(2) Percentage of Future Revenues

One alternative is the granting of a percentage of the revenues derived from public lands. As Alaska prospers because of the wealth of its now largely undeveloped resources, the Natives of Alaska desire to share in that prosperity.

A grant of a percentage of future revenues has the advantage of retaining management of the lands in government and avoiding the socio-economic problems usually associated with reservations *qua* reservations.

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Such revenue sharing has a precedent in state action affecting the claims. While the 5 percent grant of revenues from state lands to be selected in the future is not being made owing to its being conditioned upon a lifting of the "land freeze," it does indicate the state's willingness to consider revenue sharing.

The concept also has ample precedent in other federal legislation. For example,

--90 percent of the revenues from leasable minerals on federal lands go to the state;

--25 percent of the revenues from the sale of surface resources on the National Forests and National Wildlife Refuges go to the state or its boroughs;

--70 percent of revenues from the Pribilof Islands fur seal harvest go to the state; and

--5 percent of surface resource and land sales from the public domain go to the state.

In considering the grant of a share in future revenues, the question is not only the amount of the percentage of revenues but also from whose present share of revenues--the state or federal government--the percentage is to be taken.

Other alternative forms of participation in future revenues include:

(a) Assigning revenues from mineral estates, if such estates in land are granted, on a pro rata basis to all the Natives of Alaska; this alternative would avoid the creation of "have" and "have not" villages;

(b) Assigning a percentage of mineral revenues from a particular source such as the Outer Continental Shelf; and

(c) Earmarking of a specified percentage of revenues from national forests, fish and wildlife lands, and the public domain by amending existing formulas for sharing of such revenues.

(3) Revenues from Specific Lands

An alternative form of granting land as compensation might be designation of township units on a checkerboard basis as "Native lands" and the granting of revenues realized from the sale or lease of such lands and their resources to Alaska Natives. Management and control of the lands might remain in the federal or state government. If Congress chose, however, it could grant such lands in fee title.

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(4) Land Grants to Towns and Boroughs

Not all of the Natives of Alaska live in rural villages. One-fourth of them live in towns and cities having populations of more than 1,000. Although their need for land may be less and different from the need for land of the rural Natives, land also may be used as a portion of the settlement for nonrural Natives.

Based upon the resident Native population of a town or village, or of an organized borough, grants of land to the governing body of the town or borough could be used for transfer to Natives of the community upon application by them, much as a veterans' preference is given in other laws. This might further facilitate grants of land for community expansion contemplated in the Statehood Act but which have not come to pass. After a designated time any lands remaining might be retained by the community for any public purpose.

(5) Grants of Money as Compensation

The most flexible form of compensation which may be used to meet the need and satisfy the claims of rural and urban Natives alike is money. Questions raised on money compensation are the method of payment and its distribution. It may be paid in lump sum or installments over a period of time. It may be distributed to individuals, Native villages or groups, or regional or statewide organizations.

Present proposals call for installment payments. However, Congress may make a lump sum payment after determination of the budgetary limitations of the federal government and examination of the question of whether a lump sum payment would be in the best interests of the Native people. Given the pressures on the federal government at the moment, it is doubtful that adequate compensation can be achieved for Native rights lost by lump sum payment. The more important question than the method of payment is to whom payments are to be made.

Beneficiaries of Compensation

Essential to the determination of how compensation is to be distributed is a determination of its beneficiaries.

All Alaska Natives in Alaska and other places, with but few exceptions, are slated to be beneficiaries of proposed legislation. Alaska Natives are descendants of Tlingit-Haida Indians of Southeast Alaska, the Athapascans of the Interior, and the Eskimos and Aleuts whose ancestors established aboriginal claim to Alaska before the purchase from Russia. Many have intermarried with non-Natives, and two principal federal agencies providing services to Alaska Natives--the Bureau of Indian Affairs and the Public Health Service--afford such services to persons who claim to be one-quarter or more Eskimo, Indian or Aleut. Most legislative proposals follow this definition, but one

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also defines a Native as one who is so regarded. Because of the difficulty of establishing blood quantum, the latter approach is probably preferable because it will allow government to deal with the Natives of Alaska on the basis of need as well as right.

Excluded from a share in compensation until the $7.5 million judgment granted them by the Court of Claims has been matched by their proportionate part of this settlement are the Tlingit-Haidas. The Tlingit-Haida judgment is for lands taken before 1935. They also have claims pending before the Indian Claims Commission for other lands taken between 1935 and 1946. As a consequence of the land settlement, a fair compensation for these lands should be computed as a part of this settlement, and the Tlingit-Haidas should be allowed to share in that portion of the compensation without offset of the Court of Claims judgment. In addition, if equity of treatment of all aboriginal groups of Alaska is to be the rule of the Congress, there is another consideration. Indian title was confirmed by the Court of Claims in the Tlingit Haidas of 2.6 million acres of land in southeastern Alaska which has not yet been taken. If these lands are taken as a part of the land claim settlement, compensation for them also should be a part of the settlement in which Tlingit-Haidas would share.

Not excluded from present proposals are the beneficiaries of substantial revenues, the Tanaina Natives of the Village of Tyonek. Oil and gas bonuses and royalties paid them for lease of their present reserve have totaled $15 million. Whether their case warrants special treatment in the legislation is a matter for determination.

A problem area is in the matter of claims pending before the Indian Claims Commission. The sense of current land claim settlement proposals is to require the dismissal of these claims. Since decisions by Native groups themselves are to be preferred, the option should be given them to pursue their claims before the Indian Claims Commission or take under the terms of the general land claims settlement. Not all of the Alaska claims pending before the Indian Claims Commission are for possessory land rights lost. Some of them are for other damages to lives and property.

A final subject for consideration here is compensation for urban Natives. Keeping in mind that increasing numbers of Natives are moving into urban areas, that problems confronting them are often different from those of villagers and that they may not be declared as sharers in land grants made to villages and villagers, Congress may well want to give particular attention to the problems of these Natives in economic and social transition. A deficiency in all legislation thus far proposed is the lack of specific provisions to meet needs of urban Natives. Often undereducated, jobless or in low-paying jobs, and sometimes culturally ill equipped for city life, they need, among other things, increased opportunities for education and training, extensive supportive services, and the ability to obtain housing so that they do not find themselves in ghettos. Congress might award compensation that would result in a program that would, for instance, embrace the establishment of acculturation and training centers and provide for low-interest mortgage money for housing and small business enterprises.

As computation of land grants on acres-per-person ratios may not recognize variations in needs and resources, a similar mathematical computation of money compensation on a per capita basis may not recognize urban-rural, reserve-no reserve, and other disparities.

Settlement provisions concerning the distribution of compensation and its use may provide the opportunity to resolve inequities as well as assure the realization of maximum benefits from the compensation granted.

Distribution and Uses of Compensation

Immediate beneficiaries of compensation awarded might be individuals, villages or other groups, regional groups or associations, or a statewide organization. All of these have been proposed in varying combinations in pending legislation. Closely related to these issues is the matter of whether, or to what extent, Congress should determine to what uses compensation could be put.

Although the ultimate beneficiaries of compensation are individuals, making them immediate recipients of per capita payments is also a possibility. Such funds would enable recipients to purchase equipment so they might compete more effectively in the harvest of resources for commercial and subsistence use, enable them to improve their dwellings, and purchase clothing for children and provide other family necessities. Although Congress has usually ruled out the use of *all* funds received in land claim settlements for per capita grants, the poverty and enormous unmet needs of Alaska Natives argue for settling at least a portion of the compensation immediately upon them as individuals.

Distribution of funds to villages is suggested because most villages lack community facilities--sewer and water, electricity, community centers, fire protection, police protection--and all the other facilities and services which most Americans take for granted. While only 29 villages presently levy taxes and spend the funds as communities, village councils are increasingly playing responsible roles in seeking community planning and improvements. Unless grants of land or money to villages were of substantial size, however, single villages would be unable to employ professional consultants to plan for and capitalize community improvements.

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In order to realize the fullest benefits of grants intended for village advancement, compensation might be awarded to groups of villages formed for this purpose. The granting of compensation to groups of villages would also enable them, in some areas, to invest in or capitalize commercial resource development and to provide local jobs and a sustained economic base. Groups of urban Natives could likewise use funds awarded to help meet their many needs.

Compensation awarded a state organization of Eskimos, Indians and Aleuts would enable it to employ skilled professionals who could be assigned to assist regional groups or villages in planning and implementation of projects and programs for general economic betterment and provide a more powerful voice for Alaska Natives. The question before the Congress might be whether it should grant compensation directly to a statewide organization or whether the decision to support such an organization should be left to regional groups or villages obtaining compensation under the act.

Although no bills before the Congress at the present time describe the uses to which compensation must be put, Congress may wish to earmark parts of the settlement for specific purposes. For instance, since present funds made available from the Congress for post-high school education always fall short of meeting the increasing needs of Alaska Natives, an educational scholarship fund might be established. Such a fund might be used, not only for college students, but for high schoolers who are unable to attend secondary schools appropriate to their needs and wants and for high school graduates who wish to attend trade schools or college preparatory schools. In none of these areas is government now providing adequate opportunity for Alaska Natives.

Earmarking by Congress should be done only with an awareness that it is substituting its judgment for the judgment of a group of people whose rights are being compensated for and whose ability at decision making is increasingly responsible. Because government cannot know fully all the needs, wants and aspirations of any group of people, particularly those with a different cultural heritage, government must allow--indeed, encourage--them to be active shapers of their own future.

While present Native organizations have addressed themselves to important policy questions, they have, for the most part, not possessed budgets that would permit a wide scope of action. Two Eskimo associations in the West, however, are expected to receive a federal grant for local economic development efforts; and the Alaska Federal of Natives has a staff of seven for a number of programs. The federation is administrator of nearly a third of a million dollar grant from the Department of Labor for the contracting of on-the-job training for 200 persons. It is also the recipient of a foundation grant that is to be used to conduct education and training courses for village leaders.

There are many on-going programs of health, education and welfare designed for the benefit of the Alaska Native which will not be reduced in any way by the settlement of the land claims. They may be supplemented and made more effective by the settlement, however; and the settlement will contribute to the improvement of Native circumstance and life so as to better equip them to fully share in the design and implementation of these programs.

The transition away from dependence upon special programs to full control over their own affairs is desirable. Proposals before Congress endorsed by Alaska Natives indicate they wish the path to be carefully charted in legislation rather than left to future determination by government. To devise adequate organizations and machinery to accomplish this objective is no small task.

ORGANIZATION

Three organizational functions to be considered are adjudication, administration, and management of lands and revenues. While these elements are always of importance, they are of especial importance in the proposed land claims settlement in order that the land claims settlement is not simply compensation for rights taken, but that it also makes a maximum contribution to the solution of the economic problems of Native peoples. So that the settlement bill becomes the vehicle for giving Alaska Natives an opportunity to live in full social and economic equality with other Alaskans, decisions affecting these functions become of even greater significance.

Adjudication

Many determinations which are necessary cannot be made in any proposed legislative settlement, but will have to be adjudicated by an organization designated in the legislation: the determination of eligibility of beneficiaries and the resolution of conflict between beneficiaries such as between individuals for specific hunting and fishing sites, between villages as to the bounds of village territory, and between ethnic groups as to broader territorial boundaries. If a grant of village lands were to be based on a formula of acreage per person, rather than historic use and occupancy or present need, it would give rise to a number of conflicts requiring adjudication.

The task of adjudication might be assigned to a group within the Department of the Interior, or it might be assigned to an independent commission. Both alternatives are contained in pending proposals. Of the two, an independent commission is more desirable. Due to real and imagined conflicts, the commission should not be located within the Department of the Interior since adjudication, by its very nature, requires an independence from existing institutions, particularly those that have an historic relation with the land and
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the people involved. Similarly, proposals which require the appointment of Alaska Natives to such a commission violate the proposition that an adjudicatory body be composed of persons without vested interests in the problem at hand. Appointments of Natives to such a commission should be neither required nor prohibited. The main office of the commission and its staff should be in Alaska. Finally, the quasi-judicial process thus established will require authority for final judicial review in the Courts.

Administration

The principal administrative functions of surveying and conveying granted lands, transmitting appropriated funds, and establishing procedures for the crediting of apportioned revenues are functions now exercised by the Department of the Interior as a part of its charge to administer the public lands of the United States. These tasks, such as determining the location of village sites, hunting and fishing camp sites, and individual town lots, and the identification of federal withdrawals or other land boundaries, are an area of expertise associated with the Bureau of Land Management. It has the technical knowledge and skilled personnel to perform the work efficiently and at a minimum cost to the government. It is proper that this Department exercise this function with regard to any Alaska Native land claim settlement. Unlike revenues accruing from public lands which would be administered by the Bureau of Land Management, appropriations for lump sum or installment compensation could be handled directly by the Treasury Department.

Another important administrative function is that of enrollment of beneficiaries. Two alternatives for the conduct of this administrative duty are the Bureau of Indian Affairs in the Department of the Interior, and the Bureau of the Census in the Department of Commerce. No agency has fuller specific knowledge of Alaska Natives, by name and location in Alaska in 1968 than the Bureau of Indian Affairs, but the Bureau has little knowledge of Alaska Natives who have moved to other states. The coincidence of timing in this land claim settlement will probably result, however, in the Bureau of the Census having the fullest specific knowledge of Alaska Natives by name in Alaska and in other states, by the end of 1970, particularly if this task of enrollment is assigned to the Bureau of the Census as it carries out its decennial census.

Management of Assets Granted

The grant of assets to Native beneficiaries will require management of land and money, including the distribution of funds, capital investment, planning and project development, and reporting and auditing.

There are two basic approaches: one grants assets to beneficiaries directly and relies upon their management of their assets; the second grants assets in trust to the Secretary of the Interior for the benefit of Alaska Natives. One seeks to protect Native assets by adding another layer of decision making; the other seeks to assign full and final responsibility to the beneficiaries for the management of their assets. While the Native leadership prefers the management responsibility to be given to the people rather than to the Department of the Interior, they are also fully cognizant of the varying abilities of villages to make final management decisions respecting large expenditures of money.

Native leaders, in legislative proposals, have advocated organizations of beneficiaries for the management of assets at three levels: at the village level; in regional associations; and in a statewide organization. They recognize that some villages have the expertise to accomplish community betterments as well as make capital investments while others do not. Further, Native leaders believe that all villages are capable of an appraisal of their own abilities, and their proposals rely upon the villages themselves to decide whether or not to invest their money in local businesses and local improvements, or to seek assistance and advice from broader regional and statewide organizations.

One aspect of the latest legislative proposal with regard to organizations of beneficiaries offers some difficulty in that limitation is placed upon the number of associations. Additional testimony from Native groups may help determine those existing Native groups or associations to be recognized as the overall beneficiaries for their member participants. Some isolated villages, such as Inalik on Little Diomede Island, or Anaktuvuk Pass, may prefer to act independently.

Although a trust arrangement is not supported by the Native leadership, it appears they do wish the Congress to spell out the mechanisms of corporate or organizational structure for asset management which will protect both their own and the public interest.

Involved in the decisions respecting organizations for the management of assets is a search for a balanced approach which encourages independence and responsibility, but at the same time, prevents exploitation. If the perfect balance cannot be struck, it is preferable that the imbalance be in favor of Native management of their own assets and determination of their own destiny.

Auditing and reporting, as well as other functions of administration of a settlement are analyzed in the supplement to *Alaska Natives and the Land* which compares specific provisions of legislative proposals for the settlement of the claims.

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A CONCLUDING NOTE

It is recognized that this framework cannot respond fully to the whole range of complex questions confronting the Congress. It is hoped, however, that it succeeds in providing a useful perspective and assists in identifying key issues and considerations for future hearings and deliberations of the Congress in its resolution of the claims to land of Alaska Eskimo, Indian, and Aleut people.

TABLE OF FIGURES

CHAPTER I

Figure No.	Title	Page
1	Generalized Geographic Distribution of Eskimos, Indians, and Aleuts in Alaska	5
2	Distribution of Alaska Native and Non-Native Population, 1967	6
3	Distribution of Alaska Natives by Size of Place In Predominantly Native Places, 1967	6
4	Distribution of Alaska Natives by Native and Non-Native Places, 1967	7
5	Native School Enrollees, Urban Places 1956-57 and 1966-67	8
6	Percentage Distribution of Alaska's Native Population by Age and Sex, Based on the 1960 Census	8
7	Crude Rate of Natural Increase Alaska Native Population, 1960-66	9
8	Estimate of Civilian Resident Population of Alaska Native and Non-Native, 1970-2000	9
9	Native Beneficiaries in Programs of Public Assistance, Selected Dates 1961-1967	14
10	Duration of General Assistance Extended to Native Beneficiaries, Fiscal Years 1963-1967	15
11	General Assistance Expenditures by Winter and Summer Quarters, Fiscal Years 1957-1967	16
12	A Comparison of Numbers of General Assistance Beneficiaries, Fiscal Year 1967	16
13	Death Rates, Alaska Native and Non-Native, 1950-1966	19

Figure No.	
14	Tu Ra
15	A
16	I 1
17	T N 1
18	R A
19	R H Y
20	R H Y
21	L 1
22	G O
23	P A F
24	B
25	P

989

TABLE OF FIGURES

Page
,
. . 5
. . 6
e
. . 6
on-
. . 7
. . 8
. . 8
. . 9
aska
. . 9
is-
. . 14
ive
. . 15
. . 16
. . 16
. . 19

Figure No.	Title	Page
14	Tuberculosis Death Rates Alaska Native and All Races, U. S. 1950-1966	20
15	Alaska Native Deaths Caused by Violence	20
16	Infant Mortality Rates, Alaska Native and White, 1950-1966	21
17	Ten Leading Causes of Hospitalization of Alaska Natives, by Number of Admissions, Fiscal Year 1966	22
18	Rate of Incidence for Tuberculosis Alaska Native And All Races, U. S. 1952-1966	23
19	Rate of Incidence by Four Major Causes of Hospitalization of Alaska Native Adults, Fiscal Year 1966	23
20	Rate of Incidence by Four Major Causes of Hospitalization of Alaska Native Children, Fiscal Year 1966	24
21	Leading Notifiable Diseases Among Alaska Natives, 1967	25
22	Generalized Areas of Membership in Native Organizations	28
23	Principal Objects of Spending by Bureau of Indian Affairs and Division of Indian Health, Alaska, Fiscal Year 1968	31
24	Bureau of Indian Affairs Districts	32
25	Public Health Service Units	33

990

CHAPTER II

Figure No.	Title	Page
II-1	Map of Native Villages of Alaska	40
II-2	Growth and Decline of Native Places in Alaska, By Size of Total Population, 1950-1967	42
II-3	Number and Total Population pf Predominantly Native Places by Size of Place, 1950 and 1967 . .	42
II-4	Percentage Distribution of Population by Size of Place in Predominantly Native Places, 1950 and 1957	43
II-5	Portrayal of Acreage Owned by Natives or Held by the Department of the Interior for their Benefit, June 30, 1967	46
II-6	Varieties of Governmental Organization in Predominantly Native Places, 1967	47
II-7	Dependence Upon Food Gathering for Consumption: Responses of 1,467 Native Men and Women 16 Years and Over in 35 Northern and Interior Coastal Villages (1968	51
II-8	Proportion of Calories from Local and Imported Foods by Village	52
II-9	Proportion of Protein from Local and Imported Foods by Village, in Grams	52
II-10	Illustrative Seasonal Variations in Temporary Employment and Unemployment Among Alaska Native Village Adults	55
II-11	Employment Availability: Responses of 1,541 Native Men and Women 16 Years and Over in 35 Northern and Interior Coastal Villages (1968)	57

Figure No.

II-12

II-13

II-14

II-15

II-16

II-17

II-18

II-19

II-20

II-21

Page

. . . . 40

aska,
. 42

tly
1967 . . 42

Size of
0 and
. 43

Held by
Benefit,
. 46

Pre-
. 47

ption:
6 Years
tal
. 51

orted Foods
. 52

rted Foods
. 52

rary Employ-
Village
. 55

41 Native
thern and
. 57

Figure No.	Title	Page
II-12	Retail Food Prices of 14 Basic Commodities, Seattle, Washington, and Four Northwestern Alaska Villages, 1963	58
II-13	Duration of Assistance to Recipients of Aid to Dependent Children, Native Districts Compared with State	59
II-14	Duration of General Assistance Extended to Villagers in Nome and Bethel Districts of the Bureau of Indian Affairs, 1964-1967	61
II-15	Changes in Total Amounts of General Assistance to Four Largest Predominantly Native Communities , Fiscal Years 1963-1967	62
II-16	Median School Years Completed by Alaska Natives, Selected Districts, 1960	63
II-17	Native Enrollments in Schools in Alaska, 1966-1967 Native and Non-Native Places	65
II-18	Number of Persons Per Room, U. S. and Villages of Western Alaska 1960, 1965, and 1967 Data	72
II-19	Water Supply and Waste Disposal in 2,014 Native Households 1960, 1966, and 1968 Data	75
II-20	Caloric Intakes of Alaskan Eskimo and Indian Diets: All Areas and Villages, All Seasons, by Age and Sex	80
II-21	Comparison: Estimated Daily Consumption of Selected Nutrients USDA and Alaskan Eskimos and Indians per Person per Day	81

CHAPTER III

Figure No.	Title	Page
III-1	Physiographic Features of Alaska (Map)	90
III-2	Average Annual Precipitation (Map)	92
III-3	Mean Daily Maximum Temperatures in July (Map)	92
III-4	Mean Daily Minimum Temperatures in January (Map)	93
III-5	Extent of Existing Glaciers, Pleistocene Glaciers and Permafrost Regions (Map)	93
III-6	Biotic Provinces of Alaska (Map)	94
III-7	Major Subsistence Patters of Alaska Eskimos (Map)	95
III-8	Native Ethnic Groups of Alaska (Map)	96
III-9	Regions of Alaska (Map)	97
III-10	Physiographic Features with Ethnic Group Locations - Arctic Slope Region (Map)	101
III-11	Physiographic Features with Ethnic Group Locations - Bering Strait Region (Map)	102
III-12	Physiographic Features with Ethnic Group Locations - Bering Sea Region (Map)	105
III-13	Physiographic Features with Ethnic Group Locations - Southwest Coastal Lowland Region (Map)	106
III-14	Physiographic Features with Ethnic Group Locations - Koyukuk-Lower Yukon Region (Map)	109

993

Figure No.

III-15

III-16

III-17

III-18

III-19

III-20

III-21

III-22

III-23

III-24

III-25

III-26

Page
90
92
92
93
93
94
95
96
97
101
102
105
106
109

Figure No.	Title	Page
III-15	Physiographic Features with Ethnic Group Locations - Upper Yukon-Porcupine Region (Map)	110
III-16	Physiographic Features with Ethnic Group Locations - Tanana Region (Map)	113
III-17	Physiographic Features with Ethnic Group Locations - Upper Kuskokwim Region (Map)	114
III-18	Physiographic Features with Ethnic Group Locations - Bristol Bay Region (Map)	117
III-19	Physiographic Features with Ethnic Group Locations - Aleutian Region (Map) . . .	118
III-20	Physiographic Features with Ethnic Group Locations - Kodiak Region (Map)	121
III-21	Physiographic Features with Ethnic Group Locations - Cook Inlet Region (Map)	122
III-22	Physiographic Features with Ethnic Group Locations - Copper River Region (Map)	125
III-23	Physiographic Features with Ethnic Group Locations - Gulf of Alaska Region (Map)	126
III-24	Physiographic Features with Ethnic Group Locations - Southeast Region (Map) . . .	128
III-25	Aboriginal Trade Routes - North Alaska (Map)	132
III-26	Historic Native Places and Current Status - Arctic Slope Region	134

Figure No.	Title	Page
III-27	Historic Native Places - Arctic Slope Region (Map)	136
III-28	Current Native Places - Arctic Slope Region (Map)	137
III-29	Historic Native Places and Current Status - Bering Strait Region (Map)	153
III-30	Historic Native Places - Bering Strait Region (Map)	156
III-31	Current Native Places - Bering Strait Region (Map)	157
III-32	Annual Subsistence Cycle - People of Kivalina	161
III-33	Summer Land-Use Areas Utilized Late June through August 1950-1960. (Bering Strait Region)(Map)	162
III-34	Autumn Land-Use Areas Utilized Early September to Mid-November 1950-1960. (Bering Strait Region)(Map)	162
III-35	Winter Land-Use Areas Utilized Mid-November to March 1950-1960. (Bering Strait Region)(Map)	163
III-36	Spring Land-Use Areas Utilized Mid-March to June 1950-1960. (Bering Strait Region)(Map)	163
III-37	Present Day Food Quest Activities of Selected Bering Strait Villages	164
III-38	Historic Native Places and Current Status - Bering Sea Region	171
III-39	Historic Native Places - Bering Sea Region (Map)	172
III-40	Current Native Places - Bering Sea Region (Map)	173
III-41	Subsistence Products Gathered by Season - St. Lawrence Island	178

Figure No
III-42
III-43
III-44
III-45
III-46
III-47
III-48
III-49
III-50
III-51
III-52
III-53
III-54
III-55
III-56
III-57

Page

. . . . 136
. . . . 137
. . . . 153
. . . . 156
. . . . 157
. . . . 161
. . . . 162
. . . . 162
. . . . 163
. . . . 163
. . . . 164
. . . . 171
. . . . 172
. . . . 173
. . . . 178

Figure No. Title Page

III-42 Historic Native Places and Current Status - Southwest Coastal Lowland Region . . 180
III-43 Historic Native Places - Southwest Coastal Lowland Region (Map) 184
III-44 Current Native Places - Southwest Coastal Lowland Region (Map) 185
III-45 Present Food Quest Activities of Selected Villages of the Southwest Coastal Lowland Region 187
III-46 Historic Native Places and Current Status - Koyukuk-Lower Yukon Region 198
III-47 Historic Native Places - Koyukuk-Lower Yukon Region (Map) 200
III-48 Current Native Places - Koyukuk-Lower Yukon Region (Map) 201
III-49 Present Day Food Quest Activities of Allakaket and Huslia 202
III-50 Historic Native Places and Current Status - Upper Yukon-Porcupine Region . . . 209
III-51 Historic Native Places - Upper Yukon-Porcupine Region (Map) 210
III-52 Current Native Places - Upper Yukon-Porcupine Region (Map) 211
III-53 Historic Native Places and Current Status - Tanana Region 213
III-54 Historic Native Places - Tanana Region (Map) 214
III-55 Current Native Places - Tanana Region (Map) 215
III-56 Historic Native Places and Current Status - Upper Kuskokwim Region 217
III-57 Historic Native Places - Upper Kuskokwim Region (Map) 218

Figure No.	Title	Page
III-58	Current Native Places - Upper Kuskokwim Region (Map)	219
III-59	Historic Native Places and Current Status - Bristol Bay Region	226
III-60	Historic Native Places - Bristol Bay Region (Map)	228
III-61	Current Native Places - Bristol Bay Region (Map)	229
III-62	Historic Native Places and Current Status - Aleutian Region	240
III-63	Historic Native Places - Aleutian Region (Map)	242
III-64	Current Native Places - Aleutian Region (Map)	243
III-65	Census Data for Villages in Kodiak Region	248
III-66	Historic Native Places and Current Status - Kodiak Region	249
III-67	Historic Native Places - Kodiak Region (Map)	250
III-68	Current Native Places - Kodiak Region (Map)	251
III-69	Historic Native Places and Current Status - Cook Inlet Region	257
III-70	Historic Native Places - Cook Inlet Region (Map)	258
III-71	Current Native Places - Cook Inlet Region (Map)	259
III-72	Historic Native Places and Current Status - Copper River Region	261
III-73	Historic Native Places - Copper River Region (Map)	262
III-74	Current Native Places - Copper River Region (Map)	263

Figure No.	
III-75	Ch
III-76	Hi St
III-77	Hi Al
III-78	Co Al
III-79	Hi St
III-80	Hi Re
III-81	Cu Re

Figure No.	
IV-1	Ev
IV-2	Wi Ar
IV-3	Wi Be
IV-4	Wi Be
IV-5	Wi So
IV-6	Wi Ko
IV-7	Wi Up
IV-8	Wi Ta

Page

219

226

228

229

240

242

243

248

249

250

251

257

258

259

. 261

. 262

. 263

Figure No.	Title	Page
III-75	Chugach Population Data	265
III-76	Historic Native Places and Current Status - Gulf of Alaska Region	267
III-77	Historic Native Places - Gulf of Alaska Region (Map)	268
III-78	Current Native Places - Gulf of Alaska Region (Map)	269
III-79	Historic Native Places and Current Status - Southeast Region	276
III-80	Historic Native Places - Southeast Region (Map)	278
III-81	Current Native Places - Southeast Region (Map)	279

CHAPTER IV

Figure No.	Title	Page
IV-1	Evaluation Standards for Wildlife Benefits . .	292
IV-2	Wildlife Populations Arctic Slope Region	294
IV-3	Wildlife Populations Bering Strait Region	295
IV-4	Wildlife Populations Bering Sea Region	296
IV-5	Wildlife Populations Southwest Coastal Lowland Region	298
IV-6	Wildlife Populations Koyukuk-Lower Yukon Region	299
IV-7	Wildlife Populations Upper Yukon-Porcupine Region	300
IV-8	Wildlife Populations Tanana Region	301

Figure No.	Title	Page
IV-9	Wildlife Populations Upper Kuskokwim Region	302
IV-10	Wildlife Populations Bristol Bay Region	303
IV-11	Wildlife Populations Aleutian Region	305
IV-12	Wildlife Populations Kodiak Region	306
IV-13	Wildlife Populations Cook Inlet Region	308
IV-14	Wildlife Populations Copper River Region	309
IV-15	Wildlife Populations Gulf of Alaska Region	310
IV-16	Wildlife Populations Southeast Region	311
IV-17	Distribution of Alaska Wildlife - Beaver, Land Otter (Map)	312
IV-18	Distribution of Alaska Wildlife - Muskrat, Mink (Map)	313
IV-19	Distribution of Alaska Wildlife - Weasel, Marten (Map)	314
IV-20	Distribution of Alaska Wildlife - Lynx, Wolverine (Map)	315
IV-21	Distribution of Alaska Wildlife - Snowshoe Hare, Arctic Hare (Map)	316
IV-22	Distribution of Alaska Wildlife - Red and Arctic Fox, Wolf (Map)	317
IV-23	Distribution of Alaska Wildlife - Muskox, Bison (Map)	318
IV-24	Distribution of Alaska Wildlife - Mountain Goat, Dall Sheep (Map)	319
IV-25	Distribution of Alaska Wildlife - Deer, Elk (Map)	320

999

Figure No.

IV-26

IV-27

IV-28

IV-29

IV-30

IV-31

IV-32

IV-33

IV-34

IV-35-A

IV-35-B

IV-36

IV-37

IV-38

IV-39

IV-40

IV-41

IV-42

Page
. . 302
. . 303
. . 305
. . 306
. . 308
. . 309
. . 310
. . 311
. . 312
. . 313
. . 314
. . 315
. . 316
. . 317
. . 318
. . 319
. . 320

Figure No.	Title	Page
IV-26	Distribution of Alaska Wildlife - Caribou, Moose (Map)	321
IV-27	Distribution of Alaska Wildlife - Black, Polar, Brown Grizzley Bear (Map) . . .	322
IV-28	Distribution of Alaska Wildlife - Sea Otter, Walrus (Map)	323
IV-29	Distribution of Alaska Wildlife - Bald Eagle, Waterfowl (Map)	324
IV-30	Parts of the U. S. and Alaska Water Supply	328
IV-31	National Division of Annual Water Crop	329
IV-32	Alaska's Largest Lakes	329
IV-33	Major Rivers of Alaska	329
IV-34	Estimated Present and Future Water Withdrawals and Consumption, Alaska Region Units: MGD	331
IV-35-A	Major Existing Hydroelectric Powersites	333
IV-35-B	Potential Hydroelectric Powersites	334
IV-36	Navigability of Major Rivers in Alaska - 1967	335
IV-37	Relative Navigability of Major Rivers in Alaska (Map)	336
IV-38	Estimated Acreage of Cropland by Region (Includes Dairyland)	339
IV-39	Value of Agricultural Production in Alaska by Region and Percent of Total - 1965	340
IV-40	Value of Agricultural Production	340
IV-41	Summary of Potential Agricultural Crops of Alaska	341
IV-42	Reindeer Herds as of December 31, 1966	341

Figure No.	Title	Page
IV-43	Gross Income from Reindeer Herds	342
IV-44	Crops and Livestock Areas of Alaska	343
IV-45	Net Growing Stock Volume on Commercial Forest Land by Softwoods and Hardwoods, by Poletimber and Sawtimber, Alaska, 1968	348
IV-46	Net Sawtimber Volume on Commercial Forest Land by Species, Alaska, 1968	348
IV-47	Area of Commercial and Noncommercial Forest Land and Commercial Forest Land by Stand-Size Class, Alaska, 1968	348
IV-48	Forest Regions of Alaska	349
IV-49	Distribution (Map) and Relative Importance of Alaska's Fisheries	353
IV-50	Salmon Fishery Statistics - Gulf of Alaska and Copper River Regions	354
IV-51	Salmon Fishery Statistics - Southeast Region	355
IV-52	Salmon Fishery Statistics - Aleutian Region	355
IV-53	Salmon Fishery Statistics - Cook Inlet Region	355
IV-54	Salmon Fishery Statistics - Kodiak Region	355
IV-55	Salmon Fishery Statistics - Bristol Bay Region	355
IV-56	Salmon Fishery Statistics - Arctic-Yukon-Kuskokwim Region	355
IV-57	Dungeness Crab Statistics	357
IV-58	Reasons for Visiting Alaska	360
IV-59	Favorite Recreational Activities of Resident Participants (State Totals)	361

Figure No.

IV-60

IV-61

IV-62

IV-63

IV-64

IV-65

IV-66

IV-67

IV-68

IV-69

IV-70

IV-71

IV-72

IV-73

IV-74

IV-75

IV-76

Page

. 342
. 343
. 348
. 348
. 348
. 349
. 353
. 354
. 355
. 355
. 355
. 355
. 355
. 355
. 357
. 360
. 361

Figure No.	Title	Page
IV-60	Tourist Preference Areas	361
IV-61	1967 Visitor Days of Use for the Eight Regions	363
IV-62	Present Significant Recreation Areas of Alaska (Map)	374
IV-63	Potential Recreation Areas of Alaska	375
IV-64	Locatable and Leasable Resources Arctic Slope Region (Map)	411
IV-65	Locatable and Leasable Resources Bering Strait Region (Map)	412
IV-66	Locatable and Leasable Resources Bering Sea Region (Map)	413
IV-67	Locatable and Leasable Resources Southwest Coastal Lowland Region (Map)	414
IV-68	Locatable and Leasable Resources Koyukuk-Lower Yukon Region (Map)	415
IV-69	Locatable and Leasable Resources Upper Yukon-Porcupine Region (Map)	416
IV-70	Locatable and Leasable Resources Tanana Region (Map)	417
IV-71	Locatable and Leasable Resources Upper Kuskokwim Region (Map)	418
IV-72	Locatable and Leasable Resources Bristol Bay Region (Map)	419
IV-73	Locatable and Leasable Resources Aleutian Region (Map)	420
IV-74	Locatable and Leasable Resources Kodiak Region (Map)	421
IV-75	Locatable and Leasable Resources Cook Inlet Region (Map)	422
IV-76	Locatable and Leasable Resources Copper River Region (Map)	423

Figure No.	Title	Page
IV-77	Locatable and Leasable Resources Gulf of Alaska Region (Map)	424
IV-78	Locatable and Leasable Resources Southeast Region (Map)	425

CHAPTER V

Figure No.	Title	Page
V-1	Acreage of Public Domain in Alaska Under Jurisdiction of Various Federal Agencies	442
V-2	Reservations by Act of Congress	444
V-3	Indian Reorganization Act Reserves	444
V-4	Executive Order Reserves	445
V-5	Administrative Reserves	445
V-6	Claims Before the Indian Claims Commission . . .	445
V-7	Petitions for Hearings to Determine Possessory Rights or Reserves under the IRA Act	446
V-8	Wildlife Reserves which Prohibit Aboriginal Hunting, Fishing, and Trapping	447
V-9	Approximate Acreages of Various Major Withdrawals in Alaska	447
V-10	Lands Patented in Alaska (In Acres)	449
V-11	Lands Selected by the State, December 31, 1967	450
V-12	Current Allotments under Alaska Native Allotment Act by Bureau of Indian Affairs Districts	451
V-13	Survey Status of Native Townsites by Region, 1968	452

Figure N
V-14
V-15
V-16
V-17
V-18
V-19
V-20
V-21
V-22
V-23
V-24
V-25
V-26
V-27
V-28
V-29
V-30
V-31
V-32
V-33

Page

. 424

. 425

Page

nder
cies 442

. 444

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. 445

ission . . . 445

Possessory
. 446

riginal
. 447

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. 447

. 449

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. 450

ve
fairs
. 451

. 452

Figure No.	Title	Page
V-14	Land Ownership of Alaska Affected by Native Protests, June, 1968	453
V-15	Major Federal Withdrawals and State Selections (Map)	455
V-16	Arctic Slope - Current Land Status	456
V-17	Arctic Slope - Current Land Status Map	457
V-18	Arctic Slope - Native Petitions	458
V-19	Arctic Slope - Native Protests	459
V-20	Bering Strait - Current Land Status	460
V-21	Bering Strait - Current Land Status Map . . .	461
V-22	Bering Strait - Native Petitions	462
V-23	Bering Strait - Native Protests	463
V-24	Bering Sea - Current Land Status	464
V-25	Bering Sea - Current Land Status Map	465
V-26	Bering Sea - Native Petitions and Protests	466
V-27	Southwest Coastal Lowlands - Current Land Status	468
V-28	Southwest Coastal Lowlands - Current Land Status Map	469
V-29	Southwest Coastal Lowlands - Native Petitions	470
V-30	Southwest Coastal Lowlands - Native Protests	471
V-31	Koyukuk-Lower Yukon - Current Land Status . .	472
V-32	Koyukuk-Lower Yukon - Current Land Status Map	473
V-33	Koyukuk-Lower Yukon - Native Petitions	474

Figure No.	Title	Page
V-34	Koyukuk-Lower Yukon - Native Protests	475
V-35	Upper Yukon-Porcupine - Current Land Status	476
V-36	Upper Yukon-Porcupine - Current Land Status Map	477
V-37	Upper Yukon-Porcupine - Native Petitions . . .	478
V-38	Upper Yukon-Porcupine - Native Protests . . .	479
V-39	Tanana - Current Land Status	480
V-40	Tanana - Current Land Status Map	481
V-41	Tanana - Native Petitions	482
V-42	Tanana - Native Protests	483
V-43	Upper Kuskokwim - Current Land Status	484
V-44	Upper Kuskokwim - Current Land Status Map . .	485
V-45	Upper Kuskokwim - Native Petitions	486
V-46	Upper Kuskokwim - Native Protests	487
V-47	Bristol Bay - Current Land Status	488
V-48	Bristol Bay - Current Land Status Map	489
V-49	Bristol Bay - Native Petitions	490
V-50	Bristol Bay - Native Protests	491
V-51	Aleutian - Current Land Status	492
V-52	Aleutian - Current Land Status Map	493
V-53	Aleutian - Native Petitions and Protests . . .	494
V-54	Kodiak - Current Land Status	496
V-55	Kodiak - Current Land Status Map	497
V-56	Kodiak - Native Petitions and Protests	498

1005

Figure No.

V-57
V-58
V-59
V-60
V-61
V-62
V-63
V-64
V-65
V-66
V-67
V-68
V-69
V-70
V-71

Figure No.

1
2
3

Page
. 475
. 476
. 477
. 478
. 479
. 480
. 481
. 482
. 483
. 484
. 485
. 486
. 487
. 488
. 489
. 490
. 491
. 492
. 493
. 494
. 496
. 497
. 498

Figure No.	Title	Page
V-57	Cook Inlet - Current Land Status	500
V-58	Cook Inlet - Current Land Status Map	501
V-59	Cook Inlet - Native Petitions	502
V-60	Cook Inlet - Native Protests	503
V-61	Copper River - Current Land Status	504
V-62	Copper River - Current Land Status Map	505
V-63	Copper River - Native Petitions and Protests	506
V-64	Gulf of Alaska - Current Land Status	508
V-65	Gulf of Alaska - Current Land Status Map . . .	509
V-66	Gulf of Alaska - Native Petitions	510
V-67	Gulf of Alaska - Native Protests	511
V-68	Southeast - Current Land Status	512
V-69	Southeast - Current Land Status Map	513
V-70	Southeast - Native Protests	514
V-71	Porcupine-Yukon-Kuskokwim Defense Line and State Selections (Map)	516

CHAPTER VI

Figure No.	Title	Page
1	Alaska Gross Product, 1960-1965	520
2	Growth in Commodity Industries by Value of Product	521
3	Economic Subregions of Alaska (Map)	523

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